WORKSTATION NEWS
MacWEEK

[redacted]

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LATEST

Unparalleled power for Macs

NEW YORK — An AppleTalk-compatible parallel-processing machine will soon bring near-supercomputer capabilities to networked Macintoshes, according to sources close to Human Devices Inc.

At least 10 developers of processor-intensive Mac applications are adapting their programs to run on the high-performance machine, the sources said.

The new "compute-server" is expected to be introduced in October by the New York developer.

"It's a way of generating really fantastic speed and power right on your desk," said Nick Pavlovic, president of Visual Information of La

See PARALLEL, Page 9

QMS cuts color printer prices

MOBILE, Ala. — Printer manufacturer QMS Inc. last week announced a 12 percent reduction in the price of its ColorScript 100, the first color PostScript printer. Introduced earlier this year at $24,995, the ColorScript will be available for $21,995, effective immediately.

QMS also cut the price of its Colorgrafix 100 printer for PCs by $3,000 to $13,995.

The company cited the "slowly decreasing" price of DRAM chips as the reason for its move. ☐

Investment firm buys into Macs

SAN FRANCISCO — Investment banking firm Hambrecht & Quist signed a contract to purchase an information management system using 225 networked Mac IIs from Aria International, the two San Francisco-based companies announced last week.

The system is designed to deliver real-time quotes for stocks, commodities and currencies and to link data automatically to spreadsheets for "instant 'what if' calculations." It will be used to meet analytical needs of brokers, traders, analysts and managers in Hambrecht & Quist's six U.S. offices. ☐

First 68030 Mac arrives

Apple also delivers SE 2/40

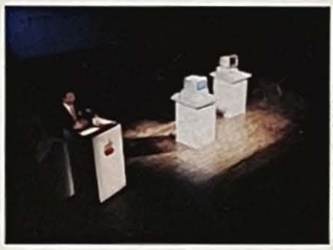
BY CLAIR WHITMER

SAN FRANCISCO — Apple made it official last week with the formal introduction of the 68030-based Mac IIx, logic board and floppy drive upgrade kits for the Mac II and the long-delayed SE 2/40.

In line with the pricing strategy Apple unveiled last week, the floppy-only Mac IIx lists for $7,769, well above the base price of the Mac II but less than the Mac II 4/40. Adding an 80-Mbyte hard drive pushes the cost up to $9,369. Bundled with A/UX, the IIx costs $9,852.

The press event was uncharacteristically low-key for a company that delights in producing introduction extravaganzas. Apple's spin on the new product was that it is more a "Mac II upgrade" than a brand-new addition to the product lineup.

Even the Mac 4/40 introduced at August's Macworld Expo rated a higher-ranking emcee, in the person of Jean-Louis Gassée, now president of the Apple Products division. This time Apple sent out Randy Battat, its 29-year-old vice president of product marketing, to oversee the announcement.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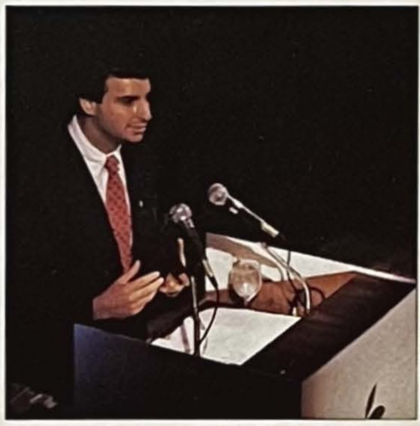
CHUCK NACKE/PICTURE GROUP

Randy Battat on the 1988 CPU introduction: "The machine was ready, so why wait?"

As expected, the Mac IIx includes a 16-MHz 68030 processor, a 68882 math coprocessor, the high-capacity SuperDrive, a built-in memory-management unit (MMU), 4 Mbytes of RAM and a new 256-Kbyte System ROM mounted in SIMM sockets.

Battat offered what he called a "conservative" estimate that the Mac IIx would provide a 10 percent to 15 percent speed improvement over the Mac II. He added that applications that make intensive use of the math coprocessor would see even greater improvements.

According to Apple, the new model will be marketed mainly as an A/UX machine, a file server and a workstation in multi-vendor environments as well as to other power users.

Apple also acknowledged that an MMU — onboard the 68030 or

See IIX INTRO, Page 8

Mac IIx no blockbuster

BY RIC FORD

TECH ANALYSIS

Technically speaking, the Mac IIx may be a disappointment to users who had hoped to see the birth of a new generation of Mac computing.

The machine that Apple is selling for nearly $8,000 is basically the old Mac II you could get a month ago for $4,000, with the addition of three more megabytes of expensive Apple RAM and several other enhancements — a memory-management unit, a new math coprocessor and a SuperDrive for floppies — that simply bring the Macintosh's hardware up a notch to levels already available in other workstations.

In the future — when Apple produces a new operating system built from the ground up for multitasking and when it manages to make the new floppy drive a little more flexible — some of these enhancements will prove genuinely useful,

See IIX ANALYSIS, Page 8

ImageStudio to get color

BY CONNIE GUGLIELMO

SANTA CLARA, Calif. — Making the most of Apple's new 32-bit color standard, Letraset USA last week demonstrated a color version of its ImageStudio image-editing software.

The new release of the previously gray-scale-only program promises to bring true-color image processing to Mac graphics users when it becomes available next year.

The Paramus, N.J., company displayed an alpha version of ColorStudio running on a Mac IIx following Apple's introduction of the new machine last week. In addition to eight bits each devoted to red, green and blue values, the program offers an eight-bit alpha channel that stores hue, saturation, luminance and black or white values for additional color editing.

ColorStudio contains the same editing tools as the original $495 gray-scale package, with all the tools working in color at all magnification levels. The program supports CMYK, RGB and Pantone color values and, according to Letraset, requires 4 Mbytes of RAM.

The as-yet-unpriced software is slated to ship in the first quarter of 1989, according to Russ McCann, marketing manager for Letraset's Graphic Design Software group.

When released, it will face competition from several other color image-editing packages vying for acceptance in the Mac graphic arts

See COLORSTUDIO, Page 9

What price Macs?

Dealers react to Apple's recent price hikes, see Page 61.

Rundgren rolls own OS

BY CLAIR WHITMER

SAUSALITO, Calif. — Todd Rundgren is negotiating with publishers again, but this time it's not for another record. The rock star and longtime technology aficionado is discussing terms with three undisclosed software publishers for the purchase of programs he has written, including a paint application and the proprietary operating system it requires.

Negotiations have reached the proposal stage with two of the three companies, which he describes as major publishers. Symantec of Cupertino, Calif., is reportedly one of the interested companies. Rundgren said he expects an announcement before year's end.

The publishers are particularly interested in Rundgren's unnamed paint program, which simulates effects on-screen that are more like real paint than current graphic tools.

Rundgren declined to elaborate on specific features because no deal has yet been signed, but he said the program has little in common with the standard MacPaint model that has been prevalent up to now.

Rundgren said his real goal is to see his alternative operating system, which carries the trademarked

See RUNDGREN, Page 9

CHUCK NACKE/PICTURE GROUP

Todd Rundgren, developer of the HyperCode OS, attended the Apple Developers Conference this year.

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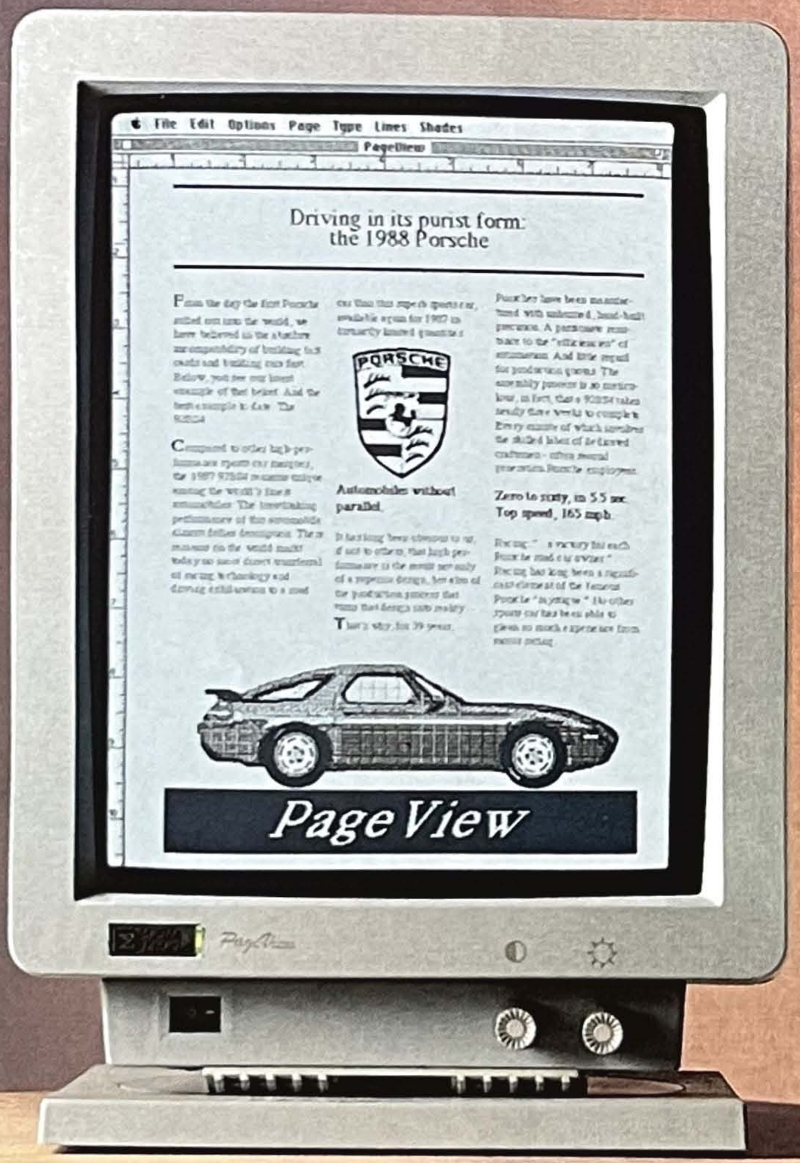
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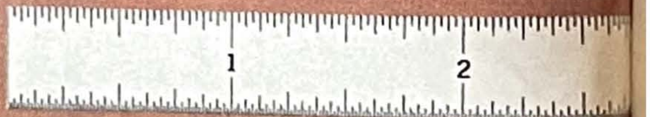

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'Virus trial' defendant convicted

Author of Texas worm may face jail

BY EMILY BROWER

FT. WORTH, Texas — The case may not involve a true virus or be the first criminal prosecution of a computer saboteur, but the conclusion of last week's celebrated 'virus trial' in Ft. Worth, Texas, does not augur well for the authors of destructive software.

A jury convicted 40-year-old Donald Gene Burleson on Sept. 19 on criminal charges for creating a destructive program that deleted 168,000 sales commission records from a former employer's mainframe. He will be sentenced next month. Under a 1985 Texas law that prohibits computer sabotage, penalties for "harmful access to a computer" could include two to 10 years in prison and $5,000 in fines.

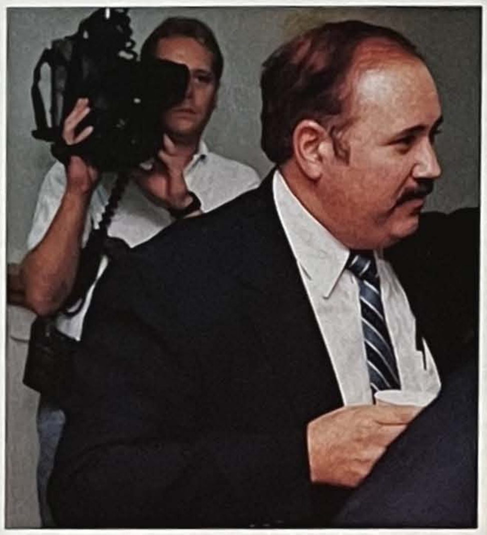
The target of the program was USPA and IRA, a Ft. Worth brokerage and insurance company. Burleson, fired from the company on Sept. 18, 1985, apparently planted a logic bomb in early September 1985 that destroyed the targeted sales records on Sept. 21 of that year.

Burleson's destructive program was not a virus in a strict technical sense. "It was a sophisticated worm. A worm does not replicate itself on other machines," said Vin McClellan, a consultant and computer security specialist. By definition, a virus is contagious.

Technically, the Ft. Worth program was a time bomb armed with a logic bomb aimed at a utility program on USPA and IRA's mainframe, experts said. Running the utility program triggered the worm, which then destroyed commission records, cloned a renamed version of itself and then deleted itself, McClellan said.

The trial's outcome provided a boost to industry groups interested in punishing virus perpetrators. "We're encouraged that public officials are taking this seriously. The verdict is a good first step and we hope the spirit of this continues," said Mike Odawa of the Software Development Council of Palo Alto, Calif.

"We've been watching this case to see which way the wind would blow," said Dave Lavery, a NASA senior computer system scientist, who discovered the Scores virus. Lavery is working as an adviser on a continuing investigation of that case. □



Donald Gene Burleson was convicted on criminal charges for creating a destructive program that deleted 168,000 sales commission records from a former employer's mainframe.

On the scene at IIx intro

BY JONATHAN LITTMAN

LITTMAN'S NOTEBOOK

SAN FRANCISCO — Empty seats in the War Memorial auditorium here were plentiful at last week's modest Macintosh IIx unveiling. John Sculley, Jean-Louis Gassée and other Apple luminaries were nowhere to be found. Attendees seemed distracted during the lackluster event presided over by Randy Battat, the 29-year-old vice president of product marketing.

"I hope they just flip open the top and pull out a laptop," said Kieth Sorenson, president of RasterOps.

But there wasn't a magician — or a laptop — in the house. The top stayed on the machine that looks just like a Mac II. That didn't stop developers from trying to figure out what, if anything, makes Brand X new and improved.

"The mean benefits [of Brand X] are invisible now," said Tom Rielly, director of marketing for Farallon Computing of Berkeley, Calif. "But they are laying the hardware foundation for very rich software that will unfold."

When users can tap that rich vein of software depends on when Apple can deliver a true multitasking operating system. According to some skeptical developers, the OS might require the gestation period of an elephant.

"I've always had a dream of being able to have a floppy and not care what machine it came from," Battat said. "We try constantly to improve the experience of the end user." Later, over the bubble of champagne, the words greeting users of Brand X's SuperDrive seemed less open minded. The machine responds with, "This is not a Mac disk. Do you want to initialize it?" if you insert your PC disk at the wrong time.

"They're low-keying it," said one analyst of the announcement. And why not? Steve Jobs will rent an entire symphony hall in a couple of weeks and pack in more than triple today's few hundred attendees. First strike or damage control?

Battat towed the Cupertino line the whole afternoon. Like this campaign year's other young vice president, he needs practice dodging the bullets. Audience questions on the price hikes simply were not handled well by the young exec. Dancing lessons may be in order. □

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Ashton-Tate snags an old Mac hand

Wigginton to be 'technical guru'

BY CLAIR WHITMER

CAMPBELL, Calif. — Ashton-Tate's Mac division has snagged one of the very first Mac software developers, giving him the reins to guide the company toward fuller integration into the Mac community.

Randy Wigginton, a member of the original Mac team, author of the original MacWrite and longtime programmer for Encore Systems, began work as chief scientist at Ashton-Tate two weeks ago.

His charter will be to generate the company's blueprint for the Mac market and to become its "technical guru and visionary," according to Terence Garnett, vice president and general manager of Ashton-Tate's Mac division, which is temporarily housed here pending a move to new quarters in Los Gatos, Calif.

Wigginton emphasized that he wants to be a "practical visionary," noting that "If you look at my history, one of my strong points has been user interface."

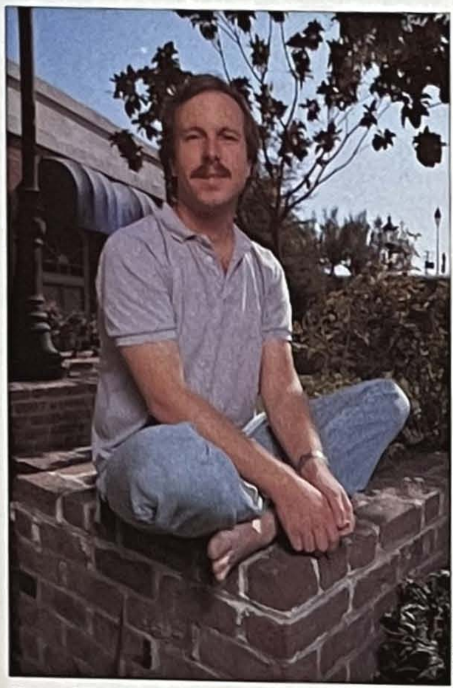
He said that the company plans to continue its strategy of introducing a product across all major product categories, but to place the emphasis on "developing talent in-house," as opposed to buying packages from outside developers.

As Apple employee No. 6, Wigginton also plans to make the most of his longstanding relationships in the Macintosh community. "Other major software companies like Microsoft and Lotus are being run by IBM people," said Wigginton, adding that Ashton-Tate's Mac division wants to develop a reputation as a home-grown Mac company.

Wigginton's relationship with Ashton-Tate began three years ago when Encore was commissioned to write the Full Impact spreadsheet.

Ashton-Tate and Bravo Technologies Inc., publisher of the competing MacCalc spreadsheet, are currently embroiled in a lawsuit in which Bravo alleges that Encore employees, including Wigginton, leaked trade secrets during the development of Full Impact.

Garnett dismissed the idea that Wigginton's employment at Ashton-Tate will affect the trial whatsoever. "A person tells the truth irrespective of whom they're working for. The facts are the facts," said Garnett. □


JEFF REINKING

Randy Wigginton will generate Ashton-Tate's blueprint for the Mac market.

Monitor system handles industrial control

BY JONATHAN PERROW

AUSTIN, Texas — Winching the Mac into the rugged world of industrial control, Monico Computer recently installed the Monitor, its Mac II-based industrial data-acquisition and trend-monitoring system, in a place that the company hopes will "legitimize" the market for the Mac.

After a crash that did about $10 million in damage to machinery at its Empress Gas Plant in Alberta, Canada, PetroCanada Resources decided to install the Monitor on two 35,000-horsepower gas turbine engines. The Monitor uses a Macintosh II packaged in a rugged case with an industrial joystick. The Opto/22 real-time data-acquisition system is bundled with the hardware.

"They're very easy to operate," said Larry Peterson, president of Austin, Texas-based Monico Computer. "All operators like a joystick, and when they like it, they use it."

The two Monitors installed at the PetroCanada plant, the first Mac II systems Monico has sold, "track and trend" more than 100 variables per second, including the temperature, pressure, flow, vibration and status of each engine. Capable of processing up to 2.4 billion cubic feet of natural gas per day, the turbines are used to decompress natural gas from the TransCanada pipeline, extract liquid elements like butane and compress the gas back into the pipeline.

The Monitor, which can track up to 960 variables per second, records, stores and plots trend patterns for all the preset turbine parameters. An alarm is activated if any of those parameters are violated.

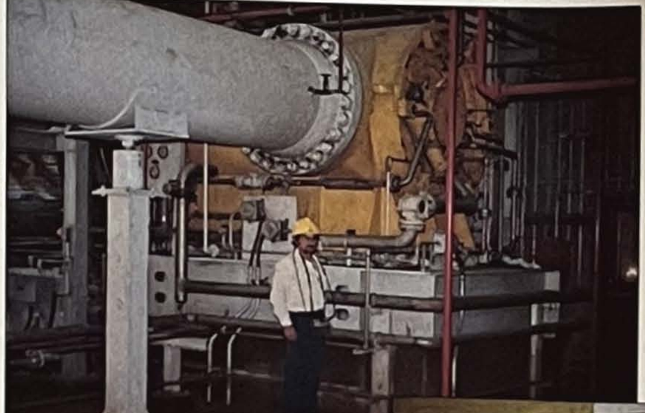
"There is definitely a place for the Monitor in this environment," said Bill Fleming, superintendent of the Empress project at the PetroCanada plant. He said the ease of use of the Monitor system will enable all the operators to take advantage of it with little or no training.

"[The Monitor] is good, and it's flexible. An operator who hasn't played the computer racket can pick it up quickly, and that's a major factor," said Bob Leyse, an analyst at Electric Power Research Institute of Palo Alto, Calif.

The power of the Mac II, coupled with a Motorola 68881 math coprocessor and the relatively high-resolution display compared with that of other industrial systems, puts the Monitor on the verge of cracking the "rotating machinery market," from oil and gas to pulp and paper, Peterson said.

Depending on the configuration, Peterson said, the price of the system ranges from $15,000 to $50,000.

Monico Computer can be reached at P.O. Box 23070, Austin, Texas 78735; (512) 288-0195. □



COURTESY MONICO COMPUTER

Turbines at a PetroCanada Resources plant (above) have their vital statistics tracked by the Monitor system, which uses a Mac II packaged in a rugged case with a joystick (right).

Sculley reaffirms support for Apple II

Apologizes for past neglect

BY EMILY BROWER

SAN FRANCISCO — Apple CEO John Sculley opened the second annual San Francisco AppleFest earlier this month with two public apologies and a confession, but assured his audience that the company's recent neglect of Apple II "lovers" was over.

"I have a bit of a public confession to make to all of you ... We took our eye off the Apple II and we did it intentionally," explained Sculley during his keynote address. "We had to change the perception that Apple was just a home computer company."

Before introducing the Apple IIc Plus and the new GS/OS, Sculley again apologized, this time for introducing a new CPU when he had repeatedly stated that there would be no new computers from Apple during the 1988 fiscal year. "I was wrong. I underestimated just what our team was able to do," he said.

Throughout his speech and afterward at a press conference, Sculley reiterated Apple's commitment to the Apple II family. He said Apple II users can expect new Apple II CPUs within the next 12 to 18 months. "Now we can come out and talk more openly about how versatile and broad-ranged the Apple II is, without any fear that it will influence our higher-end business," he said.

Statistics on Apple II sales indicate that the Mac market is in no danger of being cannibalized by the older machine. Although the Apple II line is still a billion-dollar business for Apple, the vast majority of Apple II sales are to the K-12 education market. Cumulative shipments of the Apple IIe, sold almost exclusively to the education market, are just over 2 million, according to Dataquest of San Jose, Calif. That is almost twice the 1.2 million cumulative shipments of the IIc and IIGS combined.

Although its basic design is more than a decade old, the Apple II retains 60 percent of the K-12 education market. "The Apple II market has its own momentum that Apple's attention to the Mac hasn't had an impact on," said David Grady, editor of the Grady Report of Redwood City, Calif., a newsletter on educational computing. For educational software developers, the Apple II remains the target development platform — the lowest common denominator — Grady added.

In addition, sales of the Apple II in homes have been largely influenced by the educational market. "Apple has sold computers to families because Apple IIs were being used in schools," Grady said.

Apple is banking on this home market to sell its new Apple IIc Plus. Company representatives have said the percentage of computers in the home will grow from 20 percent in 1988 to 25 to 30 percent in 1992.

But some developers are less sanguine about the prospective growth of the Apple II market. Karl Seppala, marketing and product development director for Orange Micro of Anaheim, Calif., said his company has switched its "future development very heavily toward the Macintosh."

Because the Apple IIGS comes with its own SCSI card and built-in memory expansion options, the niche markets for developers are closing, Seppala said. "The Apple II market is in decline. It has become very difficult for hardware peripheral developers to define markets for the Apple IIGS," he said.

And despite the fact that there is only one Mac for every two Apple IIs, Sculley said, "The major part of our corporate growth is and will continue to come from the Macintosh family."

In light of reports that Apple has plans for a low-end Macintosh targeted at the K-12 and consumer markets, even last week's reaffirmation of Apple's commitment to the machine on which it was founded does not clear all the clouds that hang over the Apple II market. □

Professional page-layout system ported to Mac

BY CONNIE GUGLIELMO

LONDONDERRY, N.H. — Bedford Computer Corp. is bringing its Professional Publishing System to the Mac II. A new version will run under A/UX, Apple's implementation of the UNIX operating system.

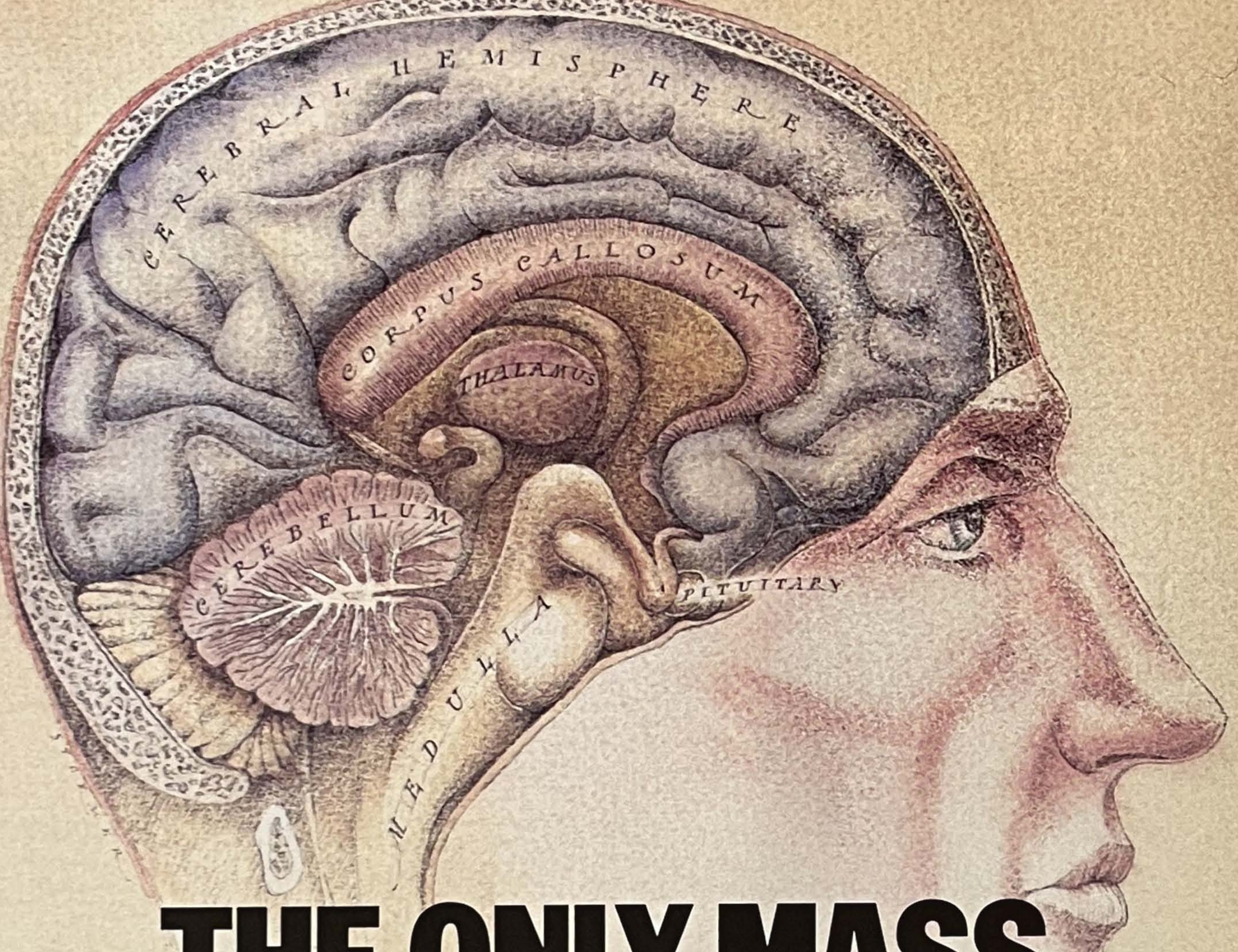
The Londonderry, N.H., company announced earlier this month that a version of its page-layout software system, originally developed in 1975 to run on Bedford's proprietary hardware, is available to Mac users. Pricing, however, has not yet been determined, said Paul White, vice president of sales and marketing.

The initial release of the software does not use the standard Mac interface and works with an external hardware device to drive PostScript printers as well as typesetters and film recorders from Linotype, ECRM, Hell Graphics, Crosfield Electronics, Compugraphic, Lightspeed and Varityper.

A version with the standard Apple user interface and built-in drivers for output devices should be ready by the first quarter of 1989, according to White.

The Bedford Composition System is a professional-level page-composition system that offers precision typographic and page-layout controls. The system offers advanced letter spacing, kerning, justification controls and support for fonts up to 1,000-point type. In addition to complex forms, the system can handle multilevel math equations and chemical formulas required for textbooks.

Bedford Computer Corp. is located at 37 Industrial Drive, Londonderry, N.H. 03053; (603) 668-3400. □



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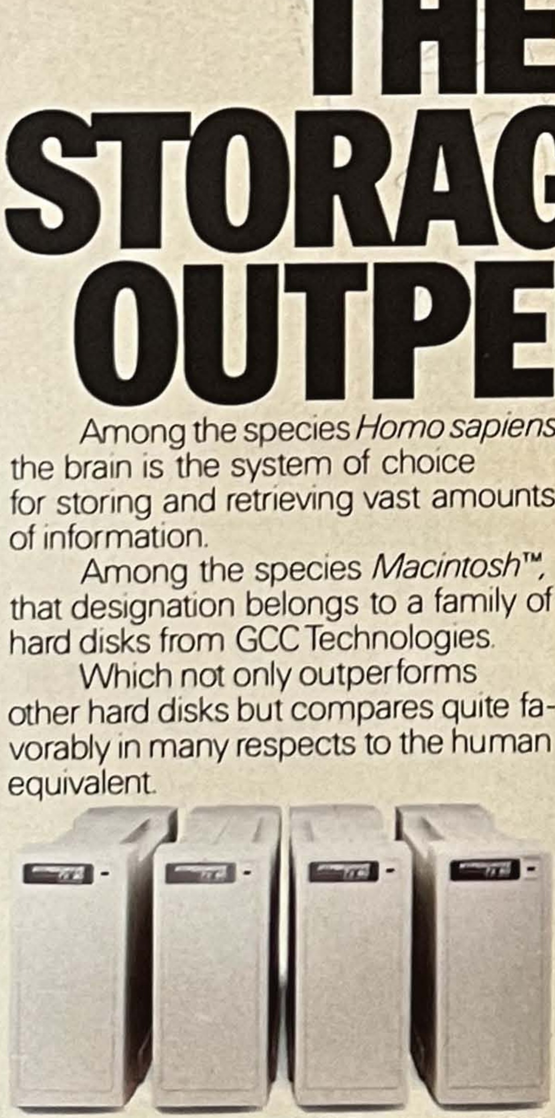

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OmniPage may bring affordable OCR to Mac

Caere takes new tack to OCR

BY BRUCE FRASER

Optical character recognition is an area that has so far seen more promises than products. While early attempts at implementing OCR on the Mac worked reasonably well with typewritten material, glacial performance and the inability to read proportionally spaced type kept them from gaining widespread acceptance. To scan typeset material, many Mac users rely on service bureaus equipped with high-end OCRs like the Kurzweil, often struggling through the process of "teaching" the machine to recognize a particular font. OmniPage from Caere Corp. of Los Gatos, Calif., is billed as the first "page recognition" application, bringing sophisticated OCR capabilities to the desktop.

The company claims OmniPage, which uses a proprietary artificial intelligence routine called AnyFont, recognizes almost any font in sizes from 8- to 72-point type and reads material even in multiple-column formats. It is not necessary to teach the software to recognize a particular font, and indeed no provision is made for doing so. The software works according to the plug-and-play principle dear to Mac users. To accomplish this, OmniPage has some heavy hardware requirements. The beta version we obtained needs either a Mac II or a 68020-accelerated SE, although a vanilla SE version will be available on request. In either case, OmniPage requires at least 4 Mbytes of RAM and a 20-Mbyte hard disk.

Of course it also requires a scanner. OmniPage can directly control either the Hewlett-Packard ScanJet or the Apple Scanner and drivers for Microtek scanners will be available soon. The program also "reads" line art from any uncompressed Tag Image File Format (TIFF) file, so other scanners can be used, albeit with some loss of control. The text-scanning process works in three stages: First, the page is scanned as a high-quality bit-mapped image, then it is "recognized" and displayed in OmniPage's integrated text editor (Transitional Editor) for any necessary cleanup. HP ScanJet or Apple Scanner users can perform all three stages of the process from within OmniPage. Users of other scanners must first scan the page as line art with their scanner's software, save it in uncompressed TIFF format, and then use OmniPage to convert it to text.

Provisions are made for handling multiple pages by first scanning all the pages, then converting the text into a single output file. The HP ScanJet, when equipped with the optional Automatic Document Feeder, can automatically process multiple pages with OmniPage. Two options exist for handling multiple columns. Auto Galley handles straightforward snaking columns. It reads text blocks sequentially and creates a single-column text file. For newspaper-style columns, Manual Galley allows users to determine the sequence of text blocks. Used in conjunction with the Partial Page scan feature, Manual Galley makes it relatively easy to scan a single article from a newspaper or magazine page, even with intervening sidebars.

OmniPage also boasts a Financial Form option for spreadsheet-type material. The program maintains both the column layout and the decimal tabs of the original. In addition to straight ASCII and MacWrite formats, the converted text can be saved as an Excel document. MacWrite format maintains bold and underlined (but not italic) text attributes as well as margins and page breaks.

OCR providers typically have claimed accuracy rates of about 95 percent, which sounds good until you realize it means that every 20th character is incorrect. Caere avoids giving percentages, and real benchmarks are beyond the scope of this preview, but in experimenting with a wide range of material we found OmniPage both accurate and speedy. However, extremely stylized fonts, tightly kerned type and glossy paper can cause problems. This should not be interpreted as a shortcoming of OmniPage — of all currently available OCRs, only the very expensive Kurzweil is capable of handling such type and then only with painstaking creation of font tables.

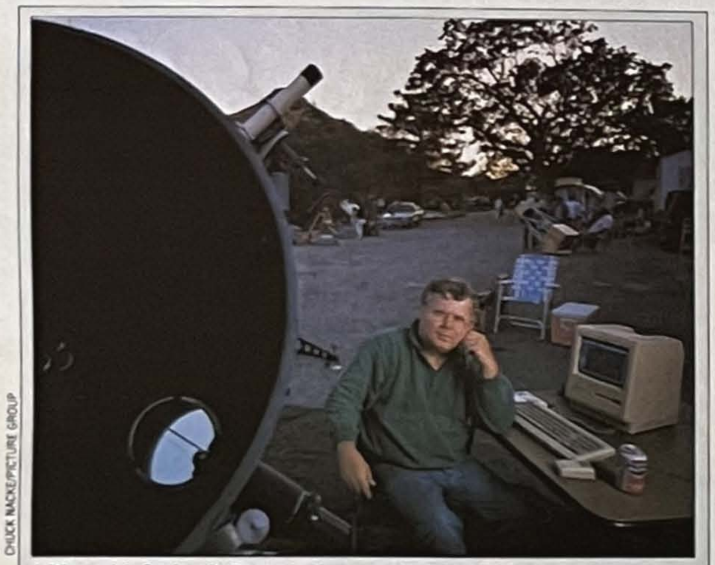
REAL SOON

In one informal test, we scanned an 850-word, three-column editorial from a newspaper. The total elapsed time between loading OmniPage and saving the document in Word 3.01 was, including cleanup, less than six minutes. The software failed to recognize three characters and mistook another four. It also inserted a return at the end of each line. No other cleanup was needed. While statistics are not reliable in such a small sample, this works out to a 0.13 percent error rate, or about two errors per standard typewritten page.

Apple is obviously impressed with this product: It has been using a beta version in demonstrations of the new Apple Scanner. The Apple Scanner/OmniPage combination almost screams "strategic product." For the suitably equipped Mac user, OmniPage opens up some exciting new possibilities for data entry. Its speed and accuracy make it feasible, for example, to build a digest of magazine or newspaper articles on disk (in HyperCard stacks, perhaps?) instead of keeping unwieldy heaps of newspaper cuttings; or to convert faxed material to an editable form instead of penciling corrections and retyping the revised document. It remains to be seen whether, as Caere claims, OmniPage is the cure for excessive key-stroking, but at $795, it certainly represents a price/performance breakthrough in OCR technology that will open new markets for scanner hardware.

Caere Corp. is located at 100 Cooper Court, Los Gatos, Calif. 95030; (408) 395-7000. □

Bruce Fraser is a San Francisco-based writer, Macintosh consultant and two-finger typist.



CHUCK NACKE/PICTURE GROUP

A Mac with Carina Software's Voyager program guides a telescope in a recent test on California's Fremont Peak.

The sky's not the limit with desktop planetarium

BY JONATHAN PERROW

SAN LEANDRO, Calif. — A telescopic control and "desktop planetarium" program is testing whether the sky really is the limit for the Mac.

High on darkened Fremont Peak near San Juan Bautista, Calif., an astronomer last week selected a speck of light on the Mac screen and double clicked. A telescope at his side moved to lock on the selected star.

Thomas Mathis, president of Carina Software of San Leandro, Calif., is beta testing Voyager, an astronomy program and telescopic control system for medium-size 12- to 14-inch telescopes.

Carina Software already has begun shipping its front end to the program, a separate product called Voyager, the Interactive Desktop Planetarium. This version of the software re-creates the capabilities of a planetarium on the Macintosh, but with more "freedom, accuracy and flexibility," the company said.

Fast enough to draw 1,000 stars on the Mac Plus in two seconds, Voyager contains a database of 14,000 objects that includes 9,000 stars, virtually everything you can see with a 10-inch telescope. The program offers three views of those objects: Local View, showing the sky from anywhere on Earth; Star Atlas format; or a hemispheric view. Constellations, grid lines, planets, and deep-sky objects like galaxies and nebulae may be displayed in any of these views.

"It's an excellent way to learn about the sky and astronomy, an outstanding tool for the amateur astronomer," Mathis said.

Voyager offers the freedom to navigate around the sky using scroll bars, zoom in on an area by drawing a box, and get information on any object by clicking on it. Advanced features of the program include planet tracking, extraterrestrial observing (viewing the sky from other planets) and printing.

Without the telescopic control feature, Voyager retails for $99.50 and runs on the Mac Plus, SE or II. Mathis said he will most likely offer the telescopic control software with telescopes that he sells for between $15,000 and $20,000.

Carina Software is located at 830 Williams St., San Leandro, Calif. 94577; (415) 352-7328. □

SuperPaint bundled with MS Word, File

REDMOND, Wash. — Users who purchase Microsoft Word 4.0 or Microsoft File 2.0 when the programs become available next month will find a little something extra tucked inside.

Under an agreement reached earlier this month between Microsoft Corp. and Silicon Beach Software, the new releases will be bundled with SuperPaint 1.1, a paint and draw package from Silicon Beach.

Silicon Beach will offer purchasers of Word 4.0 or File 2.0 a $50 upgrade from SuperPaint 1.1 to Version 2.0, which is scheduled to ship in October.

Word 4.0 will retail for $395 and File 2.0 will sell for $195.

Microsoft Corp. can be contacted at 16011 N.E. 36th Way, Box 97017, Redmond, Wash. 98073-9717; (206) 882-8080.

Silicon Beach Software is located at 9770 Carroll Center Road, Suite J, San Diego, Calif. 92126; (619) 695-6956. □

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BPA

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IIX ANALYSIS

Continued from Page 1

although by then a wider variety of '030 Mac models should be available.

For now, the IIx is just the 1988 model Macintosh II with a fat, new price tag.

The 68030 central processor of the Mac IIx runs at the same clock speed, about 16 MHz, as the Mac II's 68020. This is twice the speed of the Mac Plus' processor, but it is non-competitive with new workstations from Sun, IBM, Apollo and other companies.

By sticking with a conservative clock speed, Apple engineers avoided the problem of redesigning the Mac II board to keep up with a faster processor. This way Apple doesn't have to worry about obtaining more expensive high-speed RAM chips or about paying Motorola for a faster version of the 68030. Unfortunately, that slow 16-MHz heartbeat isn't enough to get Apple into any workstation Olympics.

What the 68030 does offer over the Mac II's 68020 is a modest 10 percent to 15 percent boost, like going from a Mac Plus to a Mac SE. That improvement results from two things: the addition of the 68030's 256-Kbyte, on-chip data cache; and the elimination of one wait state, an extra clock cycle that was designed into the original Mac II to give the processor time to access the optional 68851 memory-management unit, even though that chip was actually required only for A/UX.

Apple's cost for processors appears to be about the same for the Mac IIx and the Mac II, according to Rod Frazer, the designer of a high-performance 68030 accelerator card for DayStar Digital Inc. of Flowery Branch, Ga. Any extra cost for the 68030 over the 68020 is offset by savings from cutting out the socket and circuitry the Mac II needed for the memory-management chip.

With the IIx, Apple also switched from the 68881 math coprocessor in the Mac II to a 68882 in the Mac IIx. The 68882 speeds some operations by overlapping the execution of instructions and the fetching of data.

“That's basically the advantage to having an '882: the concurrency,” Frazer said. Other industry sources indicated that the 68881 is getting “a little stale” and that Motorola is encouraging vendors to move to the newer version. “The '882 is the one that will be available at higher speeds,” Frazer said.

The Mac II has another serious bottleneck that limits its use as a workstation for UNIX and for high-end graphics applications: the NuBus.

“It's not designed for a high-performance environment. That's just the way it is,” said Frazer.

The NuBus, which runs at only 10 MHz in both versions of the Mac II, handles all the video data. Other workstations, including the Mac SE, have a dedicated path between the processor and the video controller. In the Mac II, the processor is so busy sending pictures over the NuBus that it has little time left over for the calculations required for high-end graphics and animation.

“The reason they went with the NuBus really is because it's self-configuring,” said Al Nugent, a consulting engineer at Stellar Computer Corp. of Newton, Mass., a high-end graphics workstation manufacturer.

Nugent, like other analysts, said he thinks that the new computers coming from NeXT Inc. of Palo Alto, Calif., might have more advanced hardware than the Mac IIx at lower prices. “If I were Apple, I'd be quaking in my boots about NeXT,” he said.

As with the Mac II, the IIx lacks any provision for direct-memory access (DMA) or NuBus block-mode transfers. DMA is an important feature in full-blown UNIX systems, which must constantly transfer blocks of memory to and from disk with the help of the memory-management unit.

So, in the search for Mac IIx innovations, we come down to the replaceable ROM SIMM card and the SuperDrive, or as Apple calls it officially, the “FDHD” (Floppy Drive, High-Density).

The ROM-on-a-SIMM is a nice idea. It offers a simple way to fix inevitable bugs in the ROMs without overloading the System file and memory with patches.

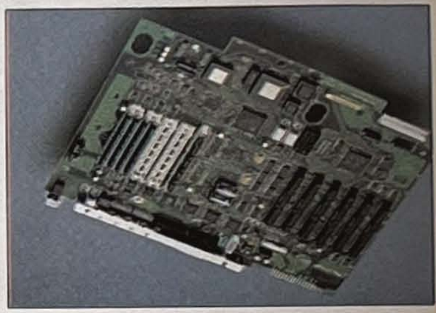
Maybe we'll get some new Mac IIx ROMs before long to enable users to see MS-DOS floppies on their Mac desktops.

While Apple touts the value of the SuperDrive for reading and writing MS-DOS files on 720-Kbyte and 1.44-Mbyte 3.5-inch disks formatted on recent IBM models and clones, the software for the SuperDrive leaves much to be desired.

The Mac's HFS file system doesn't understand MS-DOS disks, at least when it looks at them through the SuperDrive. They don't appear on the Macintosh's desktop and they don't appear in the dialog boxes when you try to open or save a file from an application like Word or Excel. In that respect the built-in Apple drive is no match for the external SCSI-based DaynaFile from Dayna Communications of Salt Lake City, which offers much greater flexibility and seamlessness.

Apple promises a fix eventually, in the form of new system software that will provide support for a variety of foreign file systems. (The recently released Startup documents [INITs] add support the High Sierra format on the Apple CD SC CD-ROM player suggest how the new approach will work.)

But for now you have to run the Apple File Exchange utility every time you want to move files between the Mac and an MS-DOS disk via the SuperDrive. Even Apple File Exchange isn't very useful until you buy a full suite of translator modules from the one main supplier, DataViz Inc. of Norwalk, Conn.



JOHN GREENLEIGH

The Mac IIx logic board is similar to the Mac II's, but adds new processors.

Technically, the FDHD is simply the Macintosh 800-Kbyte floppy drive brought up to 1988 standards of density. It's basically the same 2-Mbyte (non-formatted) unit that has been used in IBM computers for more than a year. It can, of course, also read and write 440- and 800-Kbyte Mac floppies.

Apple's drive uses a special eight-speed motor and a new custom disk controller (the Super Wozniak Integrated Machine, or SWIM, chip) that can handle both Apple's group character recording (GCR) technique and modified frequency modulation (MFM), the format used in PCs.

Apple's cost is not significantly higher for the new drive, according to Jim Porter of Disk/Trend Inc., a Mountain View, Calif., market research company that specializes in the disk drive industry.

“I'd speculate that the additional cost for the drive is nominal, if anything. The cost of the electronics is little more than $5 for the single-chip controller [used in the PC world],” Porter said. “Apple should have done it a long time ago.”

What's the bottom line? Profit. The Mac IIx costs Apple basically the same to build as the Mac II, but the list price is more than $1,000 higher. The IIx is a very conservative design that offers virtually no innovations beyond those of its predecessor. It's far slower than the 33-MHz 68030 designs that third-party companies like DayStar Digital are close to bringing to market, and underlying bottlenecks have not been addressed.

Thanks to the 68030's built-in memory-management unit, IIx owners won't need to add a 68851 chip to run A/UX and Apple's future operating systems; every other Mac owner will need a hardware upgrade or a new machine to take advantage of such software.

Here and now, though, the IIx's added technical value for current business users is very questionable. □

IIX INTRO

Continued from Page 1

added on to systems using earlier chips — will be necessary for future operating systems.

The company also took the opportunity to lift the curtain on the SE 2/40, which adds a second megabyte of RAM and a 40-Mbyte hard disk to the popular 68000-based machine. The new model carries a list price of $5,069, more than the base price of the Mac II.

Both the SE 2/40 and Mac IIx started shipping last week, Apple said, and should be available in quantity in early October.

Mac IIx logic boards and SuperDrive upgrade kits will be made available to current Mac II users in the fourth quarter. The upgrade logic board, which Apple said would be identical to the board built into the IIx, will be priced at $2,199 in exchange for the original Mac II motherboard. A Floppy Drive, High Density, or SuperDrive, upgrade kit will sell for $599, including new ROM chips as well as the SWIM drive controller.

Mac IIx product manager Mark Orr said that it is technically feasible to offer comparable upgrades for the SE, but that the company is still testing the possibility and hasn't decided when or if it will make such kits available.

The timing of the Mac IIx introduction contradicted CEO John Sculley's statement that no new CPUs would be introduced in fiscal 1988, but Battat dismissed the discrepancy.

“We're only 11 days away. The development plans were started over a year ago and the machine was ready, so why wait?,” he said, adding that the company had no reason to give up any extra revenue the new machine might bring in by the end of the fiscal year. □

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For the Record

In the Sept. 13 review of SYSTAT 3.2, the telephone number of SYSTAT Inc. was incorrect. The correct number is (312) 864-5670.

PARALLEL

Continued from Page 1

Puente, Calif., who plans to adapt his company's Dimensions line, a series of 3-D graphics, solids-modeling and animation programs, to run on the parallel-processing machine.

A single-processor entry-level configuration of the RISC-based parallel processing computer, priced at about $20,000, will deliver speeds of 10 million instructions per second (Mips) and 2 million floating-point operations per second (Mflops) (about five times the performance of the Mac II). The top-of-the-line 16-processor $100,000 version will run at 160 Mips and 32 Mflops, sources said. Traditional supercomputers cost hundreds of thousands to millions of dollars. Cray supercomputers, for example, cost between $2.5 million and $17 million and run at 50 to 200 Mips.

Comparable power-house processors for UNIX networks typically require special programming, sources close to the project said, while high-powered add-in boards for the Mac II, like the TransLink board from San Diego-based Levco or the YARC board from MacCray, also of San Diego, have so far found limited support from developers and cannot easily be shared over a network.

In contrast, the Human Devices machine is designed to provide transparent access from within specially adapted versions of Mac applications. The company reportedly has furnished a kit to software developers that makes it relatively easy for them to prepare versions of their programs to use the new machine.

End users will not even be aware that the application is passing a task over the network to the parallel processor, unless the application developer chooses to insert a message to that effect, the sources said.

Mac users will be able to tap the powerful computer via either AppleTalk or standard Ethernet hardware, and the machine will work with all Mac models.

"The thrust is away from the technical types who want to program everything for themselves toward end users who want to be able to plug and go with software they already know," a source who has seen the machine said. "It offers the kind of transparency that Mac users are used to," he added.

Besides Dimensions, Crystal Ball, a forecasting, risk-management and simulation package from Market Engineering Corp. of Denver reportedly is among the programs being adapted for the machine. MacBrain, a neural-net program from Neuronics of Cambridge, Mass., is already up and running on the machine, sources said.

Ray-tracing tasks that previously required hours on a Mac II and days on a 68000-based machine can be completed in minutes and automatically sent back to the Mac, according to Pavlovic, who sells his software to video producers and architectural companies and such companies as Boeing and General Motors.

Human Devices already has sold prototypes of its machine to several corporations that previously off-loaded computation-intensive tasks to Crays, the sources said.

The machine is expected to have special appeal to financial analysts who run elaborate simulations. "This kind of processing has typically been done on mainframes, but that isn't really cost-effective, and the guys running the mainframes have no idea how to talk to the spreadsheet jockeys," a source said.

"This is a tool for the spreadsheet jockeys rather than the rocket scientists," he added.

Human Devices developed its own operating system, Parallel Operating System (POS) based on Linda, a parallel-processing environment developed at Yale University. The tools Human Devices is providing to Macintosh developers are based on Linda.

The New York company is also said to be working on a parallel operating system based on Carnegie Mellon's Mach distributed operating system, the operating software expected to run the workstation NeXT Inc. plans to introduce next month.

Human Devices Inc. is located at 322 W. 71st St., New York, N.Y.; (212) 580-0257. — *By Jonathan Littman*

COLORSTUDIO

Continued from Page 1

community. The current crop includes two 24-bit color packages: LaserPaint II from Laserware Inc. of San Rafael, Calif., and the soon-to-be released PhotoMac from Avalon Development Group of Cambridge, Mass. GraphistPaint II from Aba Software of Malvern, Pa., provides eight-bit color manipulation.

ColorStudio is one of several new graphics products for the Mac recently introduced by the Letraset. Earlier this month, Letraset teamed with Crosfield Electronics Ltd., a leading developer of commercial-quality color prepress systems. Under the terms of the joint-development agreement, Letraset is preparing a special version of its Ready,Set,Go! desktop publishing program to work with Crosfield's family of Studio page-composition systems (see MacWEEK, Sept. 13).

Letraset also is preparing a series of special-effects modules for ImageStudio. The modules will cost less than $100 and should be available in November, said Lisa Wellman, Letraset's manager of public relations.

Two modules are currently under development. One provides controls for rotating, smoothing and scaling images, and adding drop shadows, as well as an option for making all or part of an image transparent.

Another module lets ImageStudio users create and preview halftone screens and set dot shapes and screen angles. It also supports digital mezzotints, dithered patterns that simulate engravings created by scraping a roughened surface to produce light and shade.

In another announcement, Letraset said that users of its StandOut! desktop presentation package may now send 35mm slide designs via modem to Autographix slide service bureaus. The Waltham, Mass., company has five service centers in the United States.

Letraset USA is located at 40 Eisenhower Drive, Paramus, N.J. 07653; (201) 845-6100. □

RUNDGREN

Continued from Page 1

name HyperCode, disseminated to Mac users. Acknowledging that an individual developer can't sell an operating system, he referred to his paint program as a Trojan horse. The program requires HyperCode to run but will support standard Mac graphics formats for importing and exporting.

The musician and technologist, who has spent three years developing HyperCode, plans to engage a professional programmer to add refinements before the system ships.

The interface uses a basic metaphor of books and pages. A page is an essential element of data; pages are collected into groups called books.

Written in LightspeedC, HyperCode was developed and currently runs on the Mac but could be easily ported to any platform with sufficient screen resolution, according to Rundgren. Although it uses the Mac's QuickDraw and resource manager ROM routines, it doesn't look or operate like the Mac OS. Rundgren said it is intended as an improved computing paradigm.

"The standard way that computers work now is you start up your computer and you're in this program that runs other programs [the Finder]," Rundgren said. "When you run an application, it has its own kind of files that it looks at."

In HyperCode, he said, "you navigate to various pieces of data, and when you get to the data that you want, the tools that work on it become available."

The tools are designed as separate and independent code resources that can be mixed and matched. Only the environment shell and whatever tools are in immediate use are held in memory, in order to reduce overhead requirements.

More importantly, Rundgren said, HyperCode allows individual tools to replace obsolete ones without having to get an application. "Users don't have to go out and buy a $500 program to get some things they do want and some things they don't know if they want and maybe some things they definitely don't want," said Rundgren, who envisions that most tools will be small enough to distribute on CompuServe.

"There's no low-end, high-end dichotomy [between applications], and it makes the user's environment infinitely expansible," he said. □

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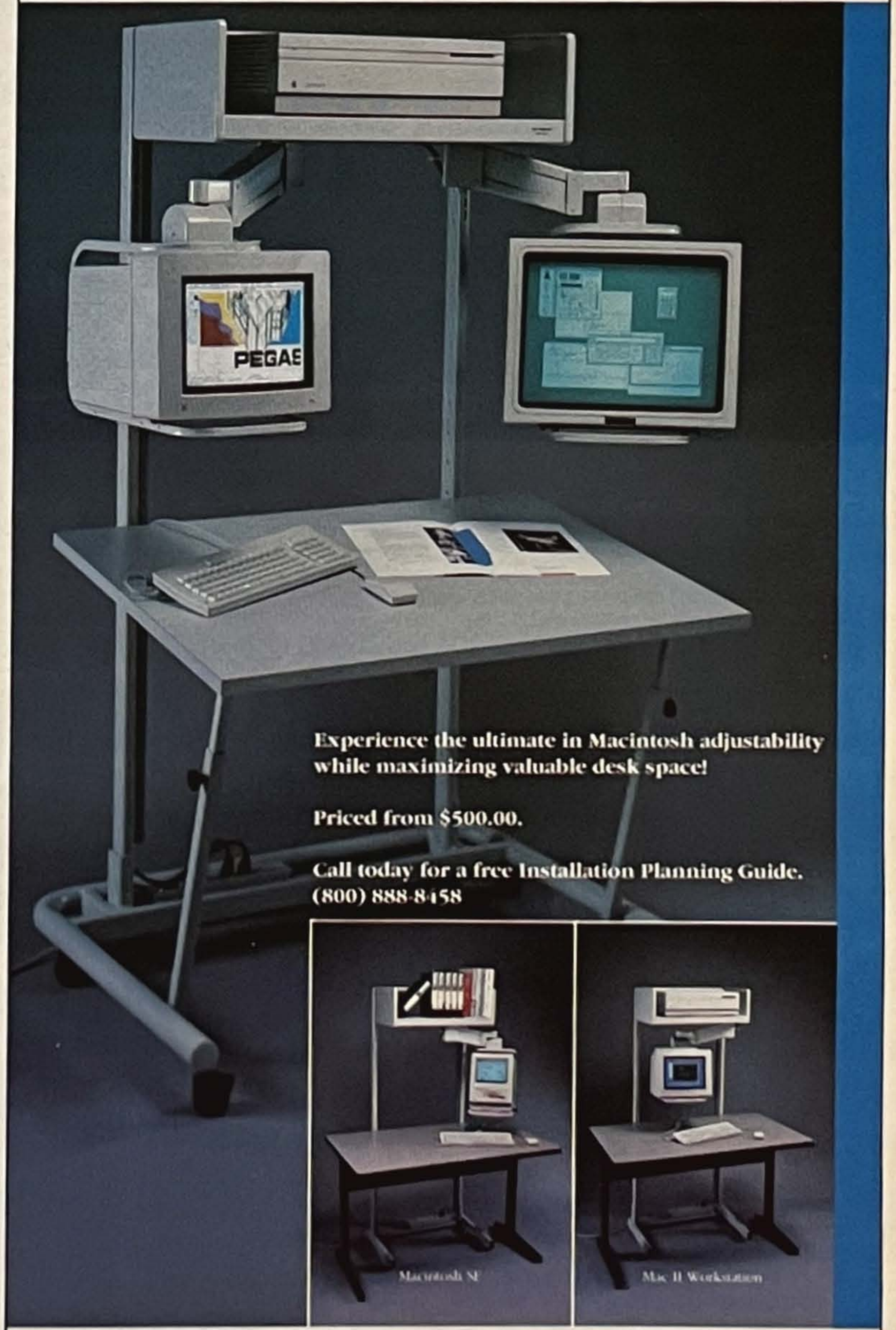

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How to build a better Mac

Apple's answer: Use a Cray

BY STEVE USDIN

WASHINGTON — Thanks to a Cray supercomputer, Apple researchers have redesigned the Macintosh II keyboard, improved the safety of hard disks, created a new microchip and, in the process, experienced 21st-century personal computing, according to Larry Tesler, Apple's vice president for advanced technology.

Earlier this month Tesler told a group of top computer scientists here attending a supercomputer symposium sponsored by the National Academy of Sciences and the National Academy of Engineering that these accomplishments would not have been possible without Apple's Cray X-MP/48 supercomputer.

Fifty researchers are using the Cray, which Apple installed two years ago, to work on 20 projects, Tesler said. Computing jobs that had to be run overnight now can be run on the supercomputer in 10 minutes, and circuit simulations that took two months on conventional computers can now be completed in one day. Programs that were run in batches are interactive on a supercomputer.

ED KASHI

Apple's Cray X-MP/48 supercomputer, supervised by Sam Holland, is used to design "the computer of tomorrow, today."

The Cray has helped solve a vexing production problem: small, dark spots on the surface of Mac keyboards that are the result of weld marks in the thin plastic. "The problem was to try to improve the appearance so that people wouldn't keep calling product support to ask why they couldn't clean their keyboards," Tesler said.

Engineers were able to solve the problem in less than two months with the Cray, whereas conventional trial-and-error methods might have taken a year or longer. Tesler showed a videotape that explains how an interactive model of the fabrication process was used to determine which were the best areas to weld.

Apple is also using the Cray to design disk drives so that the drive heads maintain a constant height over the drive surface. "You might ask why Apple studies these things when it doesn't manufacture disks," said Tesler. "I did."

The answer, he said, is that disk drive manufacturers "don't have supercomputers, so we can guide them to a better design. Since they work with us, they will come out with new designs for the Apple first, and we may be able to keep part of the design proprietary."

In addition to solving short-term research problems, Apple uses the supercomputer to advance the state of the art in personal computer design. Tesler said that Apple is using the Cray to design "the computer of tomorrow, today," and that it is helping Apple experience 21st-century personal computing. "The supercomputer is a way for us to experience the kinds of speeds that will be on desktops in 10 years," he said. "We will have to develop new interfaces, and we are working on these new interfaces with a Cray."

Developing speech synthesis is another long-term research project that Apple is pursuing with the Cray. Richard Lyon, who recently came to Apple from Schlumberger, is conducting research on the human ear's ability to sort out noise.

The Cray makes Apple bolder, Tesler concluded. "We try things we wouldn't have before," he said. "We would not have attempted one of the chips we designed because people didn't think it would work. We simulated it [on the Cray] and it did work; now we've manufactured it." □

Pioneer to head new think tank

BY EMILY BROWER

PALO ALTO, Calif. — Douglas Engelbart, the pioneering computer scientist credited with inventing multiple-window screens and the pointing device known as the mouse, has established a non-profit computing think tank in Palo Alto, Calif., called the Bootstrap Institute.

Started with a donation of $100,000 from an anonymous personal computer entrepreneur, the institute's focus will be to further develop Engelbart's theories on the interaction between technology and human organizations. Engelbart calls this theory, which has been his life's work, "augmentation," and the first item on his agenda is to write a book further explicating his ideas.

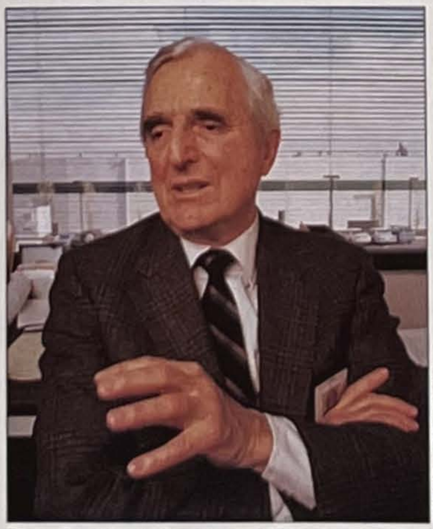
"In 1951 ... I decided to commit my career to trying to help mankind be able to cope better with complexity and urgency and the problems of the world. I had an image of sitting in front of a computer display and working with a computer interactively," Engelbart said at the Hacker's Conference held in October 1987.

At SRI International in Menlo Park, Calif., Engelbart founded the Augmentation Research Center. During his tenure at SRI, Engelbart developed the framework for his augmentation theory from which his personal computer system, called the Augment, grew.

In 1968 Engelbart gave a memorable demonstration of this system in San Francisco. The presentation demonstrated multi-user, collaborative work on a single document. Among Engelbart's other innovations are hypertext links, mixed text and graphics documents, and outline viewing.

Engelbart said there is still a "big unfinished agenda to pursue" in developing his augmentation theories.

Engelbart said he eventually would like the institute to evolve into a clearinghouse and common meeting ground for vendors, end-user organizations, consultants and universities to explore the frontiers of computer technology. The Bootstrap Institute, which is looking for additional corporate donors, will be formally announced at the Computer Supported Cooperative Work conference in Portland, Ore., this week. □


COURTESY MCDONNEL DOUGLAS

Doug Engelbart, inventor of the mouse and head of the Bootstrap Institute.

MacInTouch

BY RIC FORD AND RICK LePAGE

Issues and Trends

A hush falls over the group in the darkened conference room. The lean-faced man at the head of the long table nods to a man at one side of the room who opens the door slowly. In comes a man dressed in his native Haitian costume, trailing incense as he walks. His eyes lock with those of the man at the head of the table, who returns the gaze with an almost imperceptible answer of affirmation.

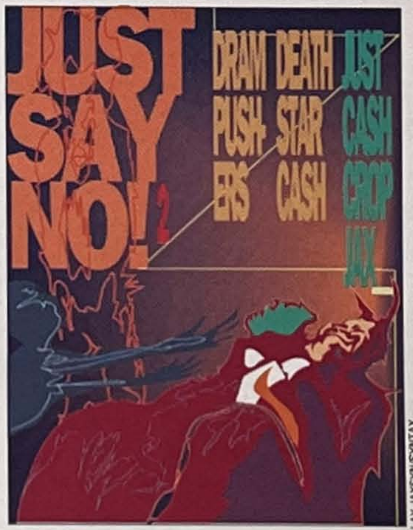
The Haitian reaches into his bag and pulls out an assemblage of small bones. He clears an area at the end of the table, oblivious to the tension that is felt by the well-dressed people sitting around the table. He rolls the bones in his hand, and with a grunt throws them into the air. They land on the table with a sound like a child's toy gun. No one breathes while the man surveys the angles that the bones make. After a short while, he erupts into a wide, toothless grin that sends a wave of sighs around the room.

The man at the head of the table smiles for the first time and turns to the woman at his right.

"Raise 'em," he says.

Well, it's got to be a good week for you if you are an Apple shareholder. The company once again put its best foot forward in the never-ending quest for higher profits. Damn the interface, full speed ahead and raise the prices while you're at it. It is voodoo economics at its best.

Displaying an arrogance that some said harkened back to John Lennon's infamous "We're bigger than Christ" statement, Apple gave us a taste of what it will be like in the 1990s — lean, mean and very hungry. If the damn things weren't so expensive, we wouldn't be surprised to see Mac bonfires spreading around the country.



LAX JAXSYN/SYNTAX

Some people we have talked to were more than a little upset. How could Apple — their Apple — do this to them? After all the struggle for respect and recognition in the corporate computing wars, Apple pulls the rug out from under its own supporters. How could it do this?

How, indeed, we asked, as the increases jogged memories of the Lisa, the 128K upgrade, the Macintosh Office, the System of the Month club and, of course, the Microsoft lawsuit.

No, we are not surprised that Apple raised its prices. After all, it's Apple's equipment. (However, if it doesn't watch out, it might just stay that way.) Apple, like IBM, has never been afraid to buck the status quo. Unlike IBM, Apple is more successful at it, but everybody's luck runs out some time.

What worries us, however, is that Apple's actions might spur a trend in the computer industry that could run out of control: Blame the Japanese and carry a big stick. But instead of conjuring up images of Teddy Roosevelt, the real model is Conan the Barbarian.

Making a mess of things. Quite a bit was made in the mid-1980s of the promise that microcomputing held for business productivity. Some of that promise has been fufilled, but the sorry reality is that the microcomputer industry is a mess right now. Memory shortages, standards problems, architecture revolts and other problems point to a malaise that won't be fixed by any one group of vendors or users. Creativity seems to be lost at the expense of making things faster and bigger. To some users, that is fine, but a lot of other people still aren't getting the job done.

Apple might be trying to fill the gaps in some of these areas, but it is going to take more than a 68030 machine that can read PC disks to make things right. And if Apple is willing to take more of our money, maybe it should get off its proprietary high horse and work a bit harder to move the industry a little further along. □

We welcome your comments and questions on MacInTouch at MacWEEK, One Kendall Square, Suite 326, Cambridge, Mass. 02139; (617) 577-1033. Electronic mail: MCI Mail: RICFORD, RLEPAGE, MACWEEK-BOSTON; CIS: 75056,1225 (Ric Ford), 75016,350 (Rick LePage); Delphi/PAN: MACWEEKBOS; AppleLink (address to the attention of "MacInTouch" in Subject): X0702; MacNET: RICFORD, RICKLEPAGE; Internet: RICFORD@CUP.PORTAL.COM; GEnie: MACWEEKBOS.

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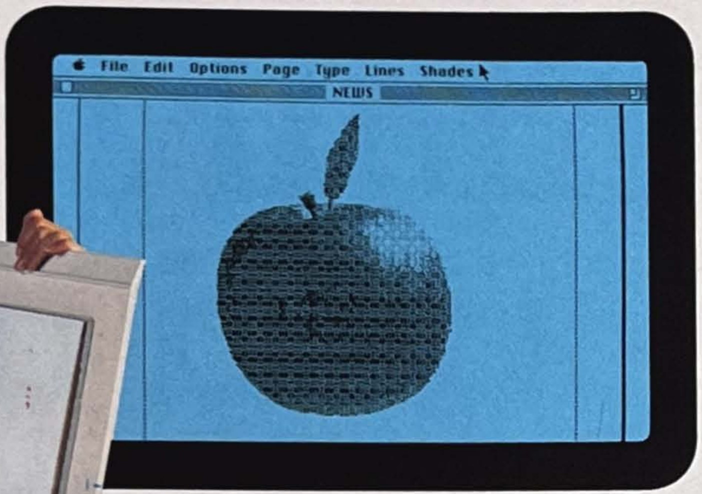

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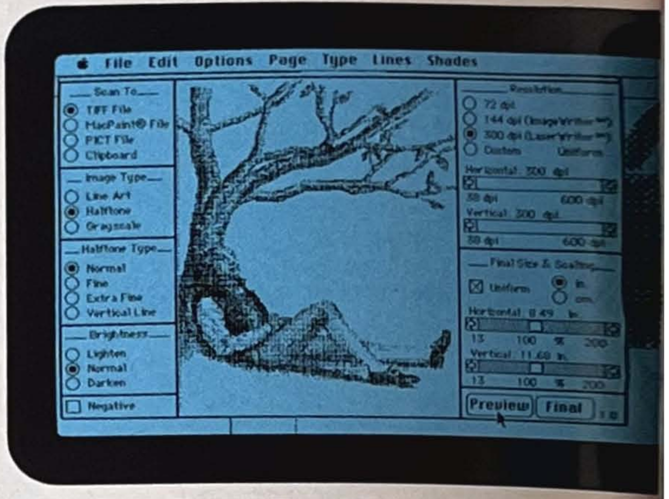

Scan To
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○ MacPaint® File
○ PICT File
○ Clipboard

Image Type
○ Line Art
● Halftone
○ Grayscale

Halftone Type
● Normal
○ Fine
○ Extra Fine
○ Vertical Line

Brightness
○ Lighten
● Normal
○ Darken

☐ Negative

Resolution
○ 72 dpi
○ 144 dpi (ImageWriter™)
● 300 dpi (LaserWriter™)
○ Custom
Uniform
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Vertical: 300 dpi

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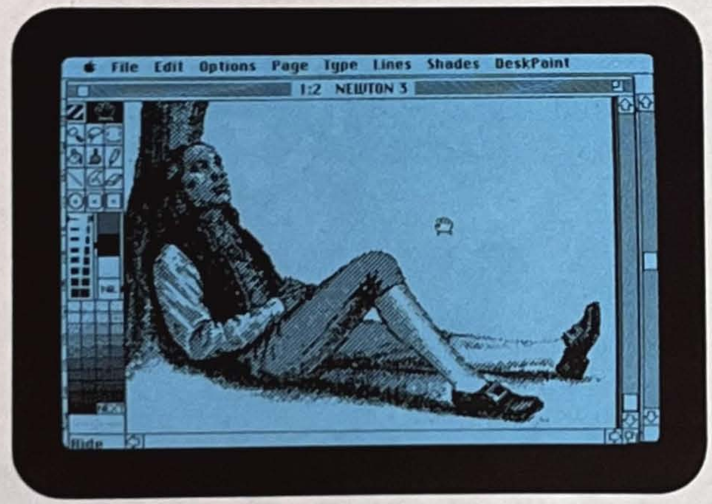

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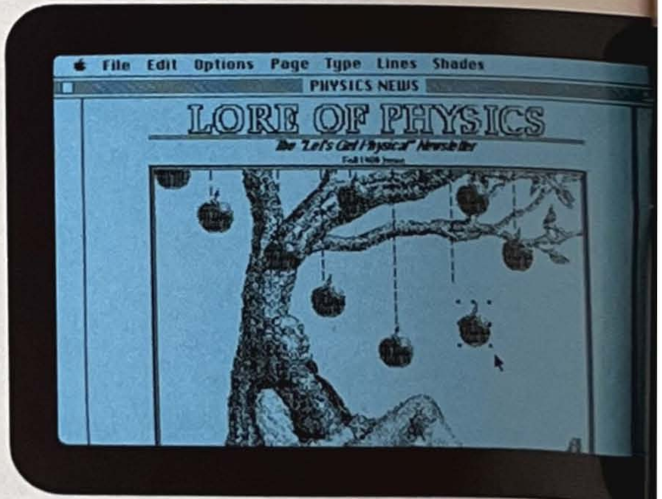
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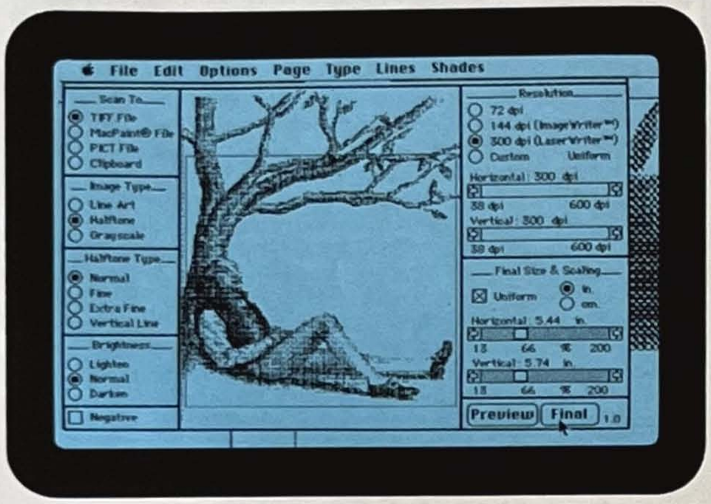

Scan To:
● TIFF File
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○ PICT File
○ Clipboard

Image Type:
○ Line Art
● Halftone
○ Grayscale

Halftone Type:
● Normal
○ Fine
○ Extra Fine
○ Vertical Line

Brightness:
○ Lighten
● Normal
○ Darken

☐ Negative

Resolution:
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○ Custom Uniform

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38 dpi 600 dpi
Vertical: 300 dpi
38 dpi 600 dpi

Final Size & Scaling:
☒ Uniform ● in. ○ cm.

Horizontal: 5.44 in.
13 66 % 200
Vertical: 5.74 in.
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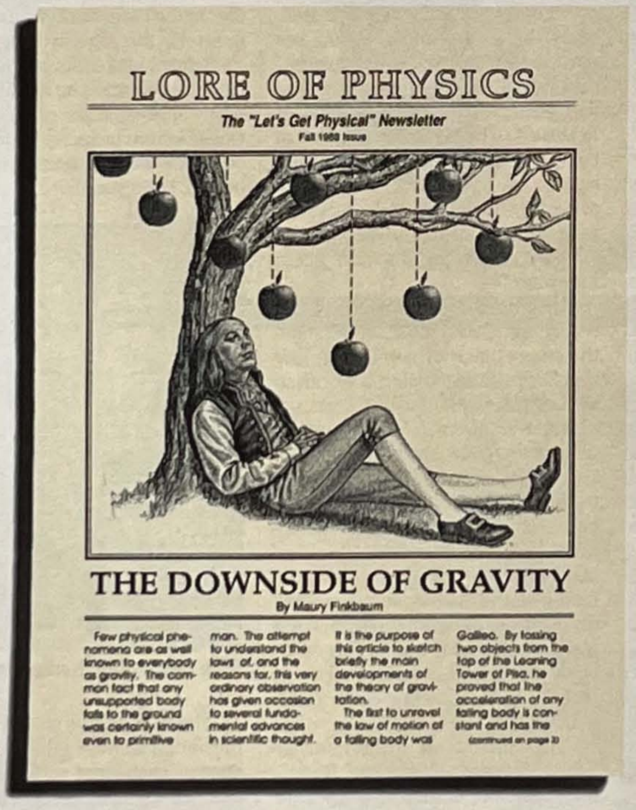

LORE OF PHYSICS

The "Let's Get Physical" Newsletter
Fall 1988 Issue

THE DOWNSIDE OF GRAVITY

By Maury Finkbaum

Few physical phenomena are as well known to everybody as gravity. The common fact that any unsupported body falls to the ground was certainly known even to primitive man. The attempt to understand the laws of, and the reasons for, this very ordinary observation has given occasion to several fundamental advances in scientific thought. It is the purpose of this article to sketch briefly the main developments of the theory of gravitation.

The first to unravel the law of motion of a falling body was Galileo. By tossing two objects from the top of the Leaning Tower of Pisa, he proved that the acceleration of any falling body is constant and has the

(continued on page 3)

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Dow Jones' new search engine

Apple shows no interest

BY EMILY BROWER

PRINCETON, N.J. — William Dunn is having trouble mixing Apple with his oranges.

The executive vice president of Information Services at Dow Jones wants to sell Apple on Dow Jones' newest development in on-line information technology, but Apple isn't biting.

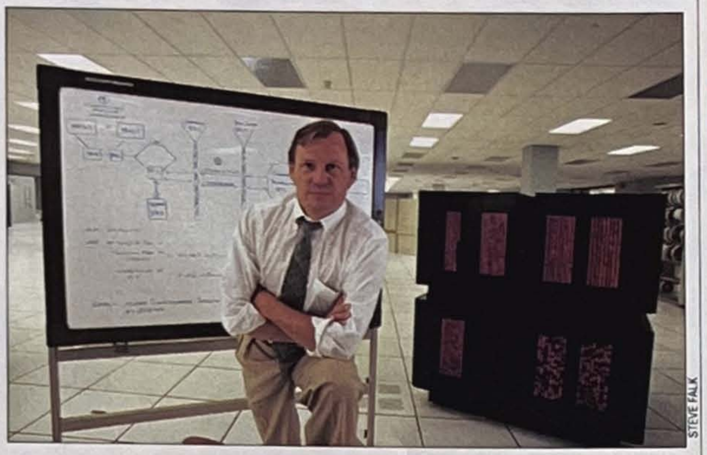
The Information Services group has a new engine that could change the way on-line information — what Dunn calls his oranges — is distributed to the end user. Dunn would like Apple to help him do it, but "the Apple people just say, 'We don't have an evangelist for that,' " Dunn said.

Dubbed the Connection Machine, the engine allows users to perform high-speed on-line searches using English for search queries. The hardware is a parallel-processing computer from Thinking Machines Corp. of Cambridge, Mass.

"Say I'm an orange grower, and New York is asking me for oranges. I go to the interstate roadway builders and tell them I need a way to get to New York, and they say 'Well, we're thinking about building a road there, but we're not sure how to do it.' Meanwhile, my oranges are dropping off my trees and rotting," Dunn said.

Well, not exactly. Dow Jones Information Services group has a 25 percent annual growth rate, which is both a boon and a burden. As part of a long-term strategy called information relocation — Dunn's way to keep ahead of the increasing demand for News/Retrieval's services — the group purchased two of the $2 million Connection Machines a year ago.

The Connection Machine, with a Mac II at the front end, is a processing powerhouse — 32,000 16-Kbyte to 64-Kbyte computer processors housed in a large black cube with impressive blinking red lights that looks more like part of a "Dr. Who" set than a powerful computing machine. "The paradigm of the Connection Machine is the notion that you have a processor for every data element of a problem you are working on," said Robert Millstein, manager of Thinking Machines' document retrieval project.



STEVE FALK

Dow Jones Vice President William Dunn is looking to sell Apple on a high-speed on-line search engine that uses English for search queries.

Combined with a query program written in LISP to run on a Mac II, the Connection Machine transforms on-line searching into the simple process of asking a question in English. "We chose the Mac for our internal use because we wanted something more facile, making it easier to play around with the interface. The Mac served as a good prototype for the way we thought the service should appear to the user," Millstein said.

By the end of 1988 News/Retrieval subscribers will have access to the Connection Machine through their regular Dow Jones accounts, although the cost and the eventual look of the system are still evolving. Subscribers will be able to use English queries to search a database containing the previous six months' issues of hundreds of publications, including Fortune, Forbes, The Wall Street Journal and The Washington Post.

Dunn gives an eye-opening demonstration of the system. Questions such as "What did Reagan and Gorbachev talk about the last time they met?" are processed in seconds. The Connection Machine uses a mathematical algorithm to search an encoded form of original Wall Street Journal text. Identifiers to documents that "answer" the question are tagged by the Connection Machine and retrieved from the actual database that resides in readable form on a mainframe computer. These documents are sent to the user, who sees a list of article titles concerning Reagan and Gorbachev and their last meeting. Those articles can also be read in full text on-line.

The system also has a feature called relevance feedback that allows users to refine their searches. The user chooses relevant articles from the list and the Connection Machine re-searches based on new criteria derived from the algorithmic values of the chosen articles.

"It's very impressive. It's definitely the kind of thing we will see more and more of in the future," said Esther Dyson, industry analyst and editor of industry newsletter Release 1.0. But Dyson was quick to point out that the system, although easy to use and "really great," is not artificially intelligent. It does pattern matching on strings of words with "clever programming and great hardware."

"People who think that on-line searching is easy don't understand the importance of something like this," said Steve Cisler, a librarian with Apple and editor of Connect, a newsletter about telecommunications in the library world.

English access to on-line information, as Millstein pointed out, is a potentially revolutionary development. The Connection Machine takes information retrieval out of the hands of the "information priests," or Boolean experts. "There are a few thousand librarians forced to work with [Boolean logic] and it's as if they were speaking Esperanto," Dunn said.

The elimination of the information middleman is part of Dunn's information relocation strategy. Dow Jones is also working on a new network that will supply corporate and university subscribers with steady streams of data through a continually live 9,600-bps connection to News/Retrieval. In Dunn's ideal world, "dial-up is dead."

In the meantime, Dunn is willing to demonstrate the Connection Machine to any interested party. And despite Apple's apparent lack of interest, he remains confident about the eventual match of his $5 million investment with Apple CEO John Sculley's visions of the Knowledge Navigator. As he said, "Someday, someone who doesn't even work at Apple yet will call us." □

Priam ups warranty to 3 years

SAN JOSE, Calif. — Priam Corp. this month boosted the warranty on its EM330 328-Mbyte hard drive for the Macintosh from one year to an industry-leading three years.

"As far as we know, we are the only vendor in the Mac market with such an extended warranty," said Pat Kline, a representative for the San Jose, Calif., drive maker.

The $3,995 EM-330, an external 5.25-inch SCSI drive with an average access time of 20 milliseconds, works with the Mac Plus, SE and II.

Richard D. Reiser, vice president of sales and marketing at Priam, attributed the extension of the warranty to the success of the company's "total quality-control program." Last October Priam announced that it had increased the mean-time-between-failure for the drive from 20,000 to 40,000 hours.

Priam's MacDisk line of external drives for the Mac includes 40-, 65-, 100- and 230-Mbyte models, for which the warranty is one year.

Priam is located at 20 W. Montague Expressway, San Jose, Calif. 95134; (408) 434-9300. □

StackWEEK

BY ERIC ALDERMAN AND STEVE MICHEL

Tips

HyperCard's buttons, fields and other "construction set" pieces normally shield you from worrying much about the interface of your stacks. However, there are times when you need to do some futzing to get it right.

A case in point is when you want to simulate a standard Macintosh application. For example, have you ever tried to make a "round rectangle" button in HyperCard that looks just like one you'd see in a normal Macintosh dialog box? First, there's no shadow behind the normal button, as there is behind HyperCard's *round rect* button.

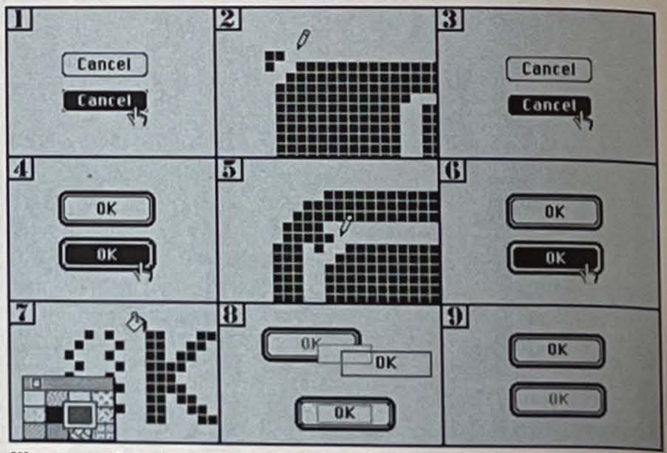
No problem, you're thinking. You'll just take a screen shot of a normal button from a dialog box, paste it onto a card and place a transparent button over it. Hunky-dory, right? Well, not bad, but the corners of the button do not hilite correctly. The corners of the *round rect* button are just that: round. Since the corners of the transparent buttons are not, you get a corner overhang. This ugliness is shown in Frame 1 of the figure below.

One way to make the button hilite normally is to use small quantities of white paint to cover up the blemishes. First, put both the graphic image of the button and the transparent button itself in the *background* layer. Then place white pixels over the blemishes on the *card* layer of each card. Frame 2 shows a fat-bits view of a button corner. (Note that you must manually set the hilite of the button to true before this step.) Use the Pencil tool to paint white pixels over the three black pixels at each corner. The result, shown in Frame 3, is that the button hilites as it should.

This might sound like a royal pain — and, basically, it is. In a database-style stack, you can ease the pain of making new cards by copying a blank template card. Use a *doMenu* handler to trap the New Card command.

As shown in Frames 4 through 6, you can achieve a similar hiliting effect with buttons that have a dark outline, which indicates a default choice. To implement the button as a default option, use a returnKey handler in the card, background or stack script. Have the handler send a mouseUp message to the appropriate button — "OK" in this case.

Ready to take this madness one step further? Another common interface consideration on the Mac is that buttons whose actions are not currently applicable are usually grayed out. It would be great to have an *enable* button property to do this automatically in HyperCard. That is, the command **set the enable of button "OK" to false** would gray out the button. However, there are still some ways to achieve this goal.



Nine easy steps to round rectangle button emulation.

The first step, as shown in Frame 7, is to gray out the paint image of the button name. To do this, choose the gray pattern, and in fat bits, click once on each letter with the Paint Bucket tool. Next, make sure the transparent button you created is named appropriately, and then set its *showName* property to true. (You'll notice at this point that the name of the button won't line up correctly with the grayed-out paint text, so you'll need to move up the paint text one pixel or so.)

At this point, you can disable (gray out) the button simply by hiding it, and then enable it by showing it. However, if you set the button's *autoHilite* property, you'll see that "OK" actually becomes gray and not white for a split second while the button is hilited.

The last step, then, is to create an additional button we'll call "Cover OK". This button will be a smaller, opaque button that should be positioned *underneath* the transparent "OK" button, as shown at the top of Frame 8. (Use the Send Farther command.) Line up the buttons as shown at the bottom of Frame 8. Now, you'll see a white "OK" when you hilite. You need to show both buttons when you want "OK" to be enabled, and hide them both when you want it disabled. Frame 9 shows the button enabled and disabled. — E.A.

If you have questions, comments or tips, contact us c/o MacWEEK or by E-mail at: MCI: STACKWEEK; AppleLink: D1507 (Steve) or D1577 (Eric).

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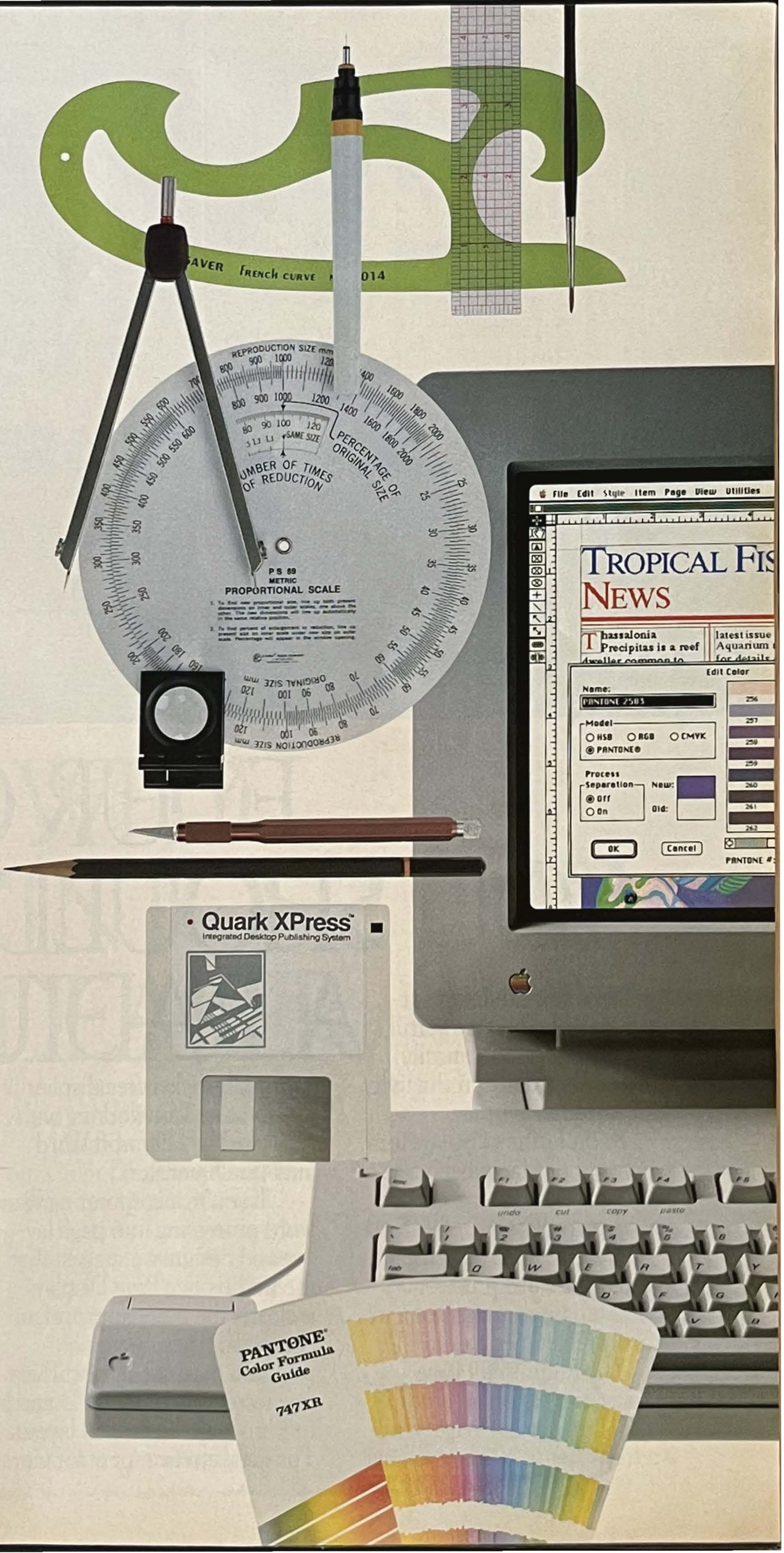

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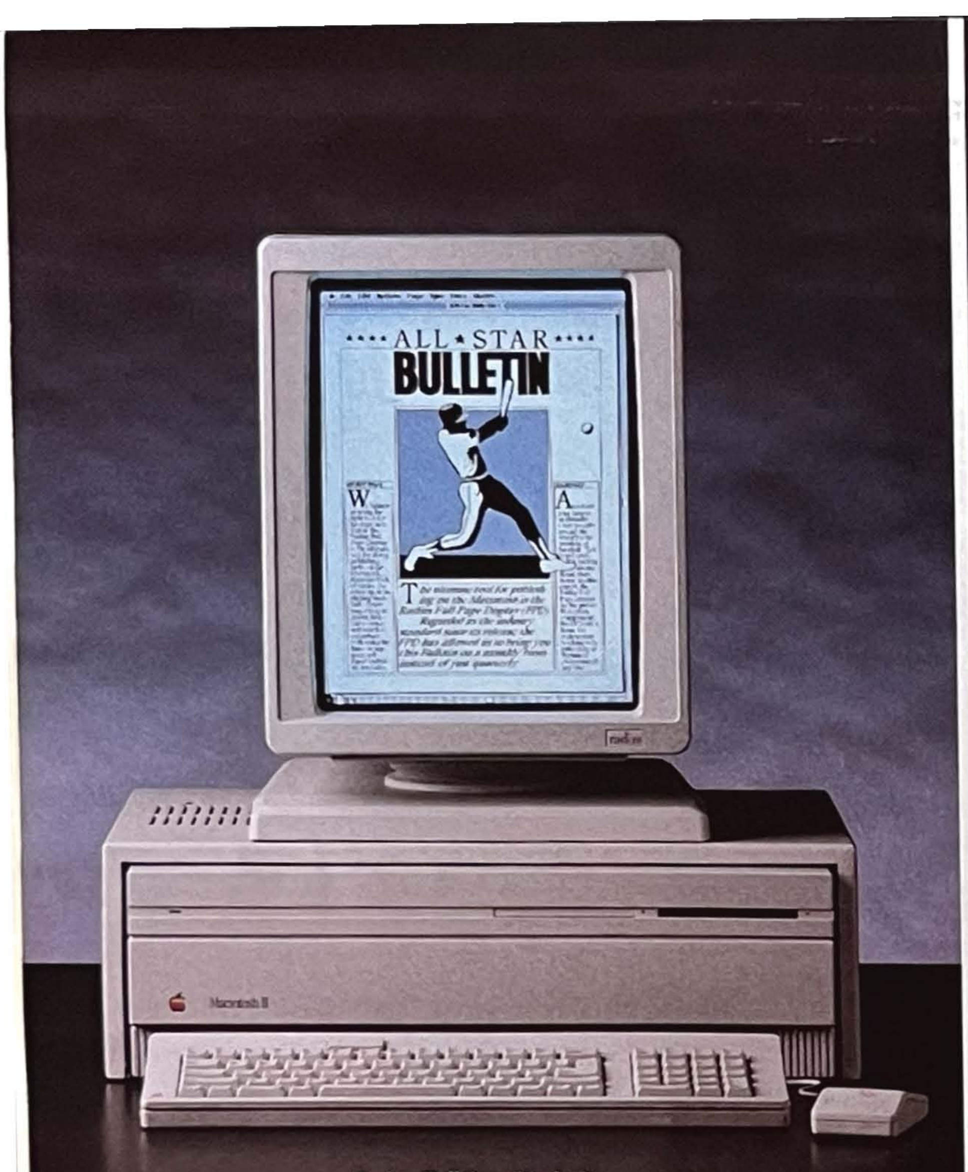

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'Mac wizards' feted by Boston users group

Kahl, Knaster discuss programming issues

BY RIC FORD

BOSTON — Michael Kahl and Scott Knaster are certified Macintosh wizards — the first two hackers to be ordained by the technical subgroup of the Boston Computer Society's huge Macintosh users group.

During the Macworld Expo held in Boston last month, the BCS MacTechGroup held a two-night celebration of programming on the Macintosh, with Kahl and Knaster as the guests of honor.

Along with a free dinner, the wizards got special MacWizard T-shirts, framed certificates and a moment in the spotlight before an audience of 100 Macintosh techies.

Kahl is the creator of LightspeedC, a product of Symantec Corp.'s Think Technologies division and the favorite development environment among members of the MacTechGroup. While demonstrating some neat techniques for customizing dialog boxes, Kahl delved into the details of C and the Macintosh.

Even veteran programmers were amazed to learn how he uses one version of his compiler to create the next version.

"LightspeedC 3 is developed in LightspeedC 3.0B9," said Kahl, explaining that he has pulled each version of the development system up by its bootstraps since 1985.

"At any one time, I'm likely to have three LightspeedC's and two debuggers [under MultiFinder]. It sometimes gets confusing," he acknowledged.

The audience appreciated the complexity of using a program to develop and debug itself, something that is outside the scope of normal applications programming.

Kahl didn't reveal any big secrets but did address some important issues such as source-code compatibility and standardization.

"We are committed to conforming fully to the ANSI (American National Standards Institute) standard [for the C language], but we don't conform fully yet. ANSI compatibility will be in a later release," Kahl said.

He explained that source-level debugging was highest on programmers' wish lists, which delayed the ANSI effort. He also described how many important ANSI features, such as function prototypes, had already been included in LightspeedC.

In response to questioning from the audience, Kahl touched on the issue of support for object-oriented programming, or the C++ derivative of the language — something many Lightspeed users hope to see in a future version.

"We are going to put in objects and we're going to do it in such a way that it is syntax-compatible with C++," Kahl said. He pointed out that C++ itself is not completely finalized

Apple MPW team shows

Starring in the first half of the MacTechGroup's celebration was the Apple team responsible for the Macintosh Programmer's Workshop, the company's widely used professional development system. The Apple representatives demonstrated some new development tools and talked about the upcoming Version 3.0 of MPW.

New versions of ResEdit and MacsBug, Apple's resource editor and Mac debugger, respectively, will be bundled with MPW 3.0, the Apple officials said. Both are currently available from the Apple Programmer's & Developer's Association.

Also being released through APDA is a beta version of MacApp 2.0, Apple's object-oriented development system.

Programmers will have to wait a little longer for MPW 3.0 and for C++ support, however. C++ is behind schedule, and MPW 3.0 won't be beta tested until sometime this fall.

When released, the new version will include Projector, a source-code management system aimed at large-scale development; SADE (Symbolic Application Debugging Environment), a high-level debugger; and some new tools that run inside the MPW shell.

Projector is a group-development organizer similar to those common on minicomputer systems like Digital Equipment Corp.'s VAX. Apple's version is built into the MPW shell, and it has two uses: to maintain a complete history of code modifications and to coordinate changes to common files.

Programmers can leave comments and define "tasks" as they "check in" a source file to the development project. A corresponding "check out" action keeps anyone from overwriting someone else's code by

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and that implementing C-language support for objects could be done in a variety of ways.

Knaster took center stage following the applause for Kahl. Widely known for his books, "Secrets of Macintosh Programming" and "How to Write Macintosh Software," and long the manager of technical support at Apple, Knaster returned to the company earlier this year as "author-engineer" after a short stint at ACIUS.

Knaster first cleared up the question of how he could accept a MacWizard award when his first book asserts "There should be no wizards."

"I really dislike the idea — not of people becoming expert at something but of not sharing it," he said in explanation of his earlier comment.

Knaster related how, as a new technical support person on Apple's Macintosh team, he had a problem with some code that had come from master-hacker Andy Hertzfeld. After hours of working alone on the problem, he tentatively approached Hertzfeld, who freely admitted making a mistake.

For Knaster it was a revelation: "Even Andy Hertzfeld can make a gross bug in a piece of software that ships."

The evening's talk ranged from what's involved in writing books ("It's easier to get rich on a HyperCard book aimed at a million users than one written for a few thousand programmers") to the philosophy of programming the Macintosh: "This is a business where one person with a great idea can really do something."

A videotape of the wizards' meeting is available. Contact BCS•Mac at 48 Grove St., Somerville, Mass. 02144; (617) 625-7080 for details. □

new development tools

accident. Projector doesn't guard against malicious mischief but helps prevent communication errors and omissions in group programming projects.

Like LightspeedC 3.0's debugger, SADE needs 2 Mbytes and MultiFinder to run. SADE requires a modified version of MultiFinder, which will be sent to developers with MPW 3.0. Eventually, the standard MultiFinder should incorporate SADE hooks.

SADE is powerful but not simple. It has a scripting language, user-definable menus, multiple windows and an interface known as the SADE "worksheet." To support multiple languages, the syntax of the SADE language resembles a cross between Pascal and C. In its first release, SADE may not be C++ aware, but it should handle debugging of desk accessories and cdevs (Control Panel devices) as well as standard applications.

Apple has been responding gradually to the fact that there are at least as many C programmers as Pascal enthusiasts in the Macintosh community. MPW 3.0 will have a completely new C compiler, with a C++ translator close on its heels.

The new C compiler is supposed to compile twice as fast as the former (Greenhill's) version and will include ANSI-standard features like function prototypes. Less assembly "glue" will be required to interface with the Mac Toolbox, and the generated object code will be slightly tighter than before, the Apple representatives said. Data segments larger than 32 Kbytes will also be possible.

MPW 3.0 will ship with more examples than in the past, and the shell will have additional tools for choosing AppleTalk devices, dumping data and resource forks of files, and finding files on disk. — *By Ric Ford*

GCC reduces hard drive prices

BY RENEE MATHEWS

WALTHAM, Mass. — In the face of mounting price competition in the Macintosh hard drive market, GCC Technologies has reduced the prices on its mid-size drives by as much as 28 percent.

The price cut affects both the internal and external models of GCC's 40-Mbyte and 60-Mbyte drives.

Effective immediately, the retail price for the FI/40 SE internal drive for the Mac SE has been reduced from $1,399 to $1,099. The price of the FI/40 internal model for the Mac II has been cut from $1,199 to $1,049, the company said.

The FX/60 external drive for the Mac Plus, SE and II is now available for $1,499, down from $1,699, and the internal FI/60 for the Mac II has been reduced from $1,599 to $1,149.

In addition, GCC has initiated a dealer trade-in program to allow users with existing HyperDrive 10, 20 or 2000 internal models to upgrade to an FX or FI drive for a reduced price. According to John Mracek, GCC director of marketing, the trade-in program honors any complete HyperDrive, "whether it's in working condition or not."

Upgrade prices for a HyperDrive trade-in, excluding additional dealer charges for handling, include $400 for an FX/20, $630 for an FX/40, $765 for an FX/60, $995 for an FX/80, $525 for the FI/40 for the Mac SE, $525 for the FI/40 for the Mac II, $675 for the FI/60 for the Mac II, $900 for the FI/80 for the Mac II and $1,375 for the FI/150 for the Mac II.

GCC Technologies is located at 580 Winter St., Waltham, Mass. 02154; (617) 890-0880. □

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LetrTuck stores kerning pairs in FOND resource of fonts

BY CLIFF LEHMAN

TAMPA, Fla. — For Mac users in need of typeset-quality letter spacing, a new program from a developer here offers an easy way to add and edit kerning information in screen and PostScript fonts.

LetrTuck for the Mac from EDCO Services Inc. allows users to define up to 2,000 kern pairs per font and store them permanently in the FOND resource of the font.

With the $99 program users can change the spacing between pairs of characters by user-defined increments ranging from a tenth to two-thousandths of an em. (An em is as wide as the height of a font in points.) The kern values are translated into the PostScript thousandth-em system and reinstalled in the FOND resource of the font being kerned.

"Some font manufacturers provide few or no kerned pairs, and there is no easy way for users to adjust the kerning," said Ed Cohen, president of EDCO, "but LetrTuck's Mac interface requires little effort."

A package combining Mac and PC versions of LetrTuck is available for $149. The program's proof function automatically prints kerned pairs in five sizes to check kerning adjustments. Users also can copy kerning information from one font to other fonts.

EDCO Services is at 12410 N. Dale Mabry Highway, Tampa, Fla. 33618; (800) 523-8973. □

Keyboard to work with Macs, PCs

BY JONATHAN PERROW

PLYMOUTH, Minn. — Northgate Computer Systems has announced a switch-hitting keyboard designed for use with Macintosh and IBM computers at the flick of a DIP switch. The new ADB keyboard should ship by mid-November, according to the company.

Northgate also announced it purchased InterFatron, an engineering company that previously worked closely with DataDesk International, a keyboard manufacturer based in Van Nuys, Calif.

Northgate's OmniMac+ sports a 104-key layout. Unlike current IBM PC keyboards, Apple's Extended Keyboard and other third-party keyboards for the Mac, all of which line function keys across the top, OmniMac+'s 12 function keys are placed on the left side of the keyboard. Offering the "click-tactile touch" key sensitivity associated with IBM keyboards and with OmniKey, Northgate's PC replacement keyboard, OmniMac+, is due for shipment at the November Comdex show in Las Vegas.

By setting DIP switches on the underside of the keyboard, users can configure it to work with either IBM, Compaq, NEC, AT&T and other PC-compatibles or Macs. Adapters that convert the Mac ADB cable to a PC 15-pin connector will be available for $25, and similarly priced cables are available to convert from PC to Mac.

"I understand that Macs are invading PC environments," said Andrew Lazere, chairman of Northgate, "and it's creating a lot of problems with typing personnel. Now, an entire office can be outfitted with the same keyboard layout, touch and feel," he said. "It's a productivity solution."

At $129 with an unlimited three-year warranty, Northgate's keyboard will be the least-expensive full-size keyboard available for the Mac. Apple's extended model with a 90-day warranty is priced at $229, while Ehman Engineering Inc. of Evanston, Wyo., offers its Mac-105 ADB for $199 with a one-year warranty. DataDesk's Mac 101 has a suggested retail price of $169.95 with a two-year warranty.

Both the DataDesk and Ehman boards include keyboard macros that let users take advantage of the function keys. Lazere said, "It is very likely" that an unnamed macro program will be bundled with Northgate's keyboard when it ships.

Northgate is at 13895 Industrial Park Blvd., Plymouth, Minn. 55441; (612) 553-0734. □

CD art on floppy

SANTA CLARA, Calif. — In an attempt to expand its market beyond the still-small ranks of Mac users with CD-ROM players, Multi-Ad Services has begun offering its CD-ROM clip-art library on floppy disks.

Recently renamed from Kwikee Inhouse Pal Professional Art Library to ProArt Professional Art Library, the potpourri collection includes 300 pieces of PostScript art in 12 categories. First shipped in March on CD-ROM, the art is now available for $189.95 on 23 Mac disks and includes a paper-based index and a disk holder. The company said it will eventually offer separate art collections devoted to holidays, sports and business.

Multi-Ad Services Inc. is located at 1720 W. Detweiller Drive, Peoria, Ill. 61615; (800) 447-1950; in Illinois (800) 322-3941. □

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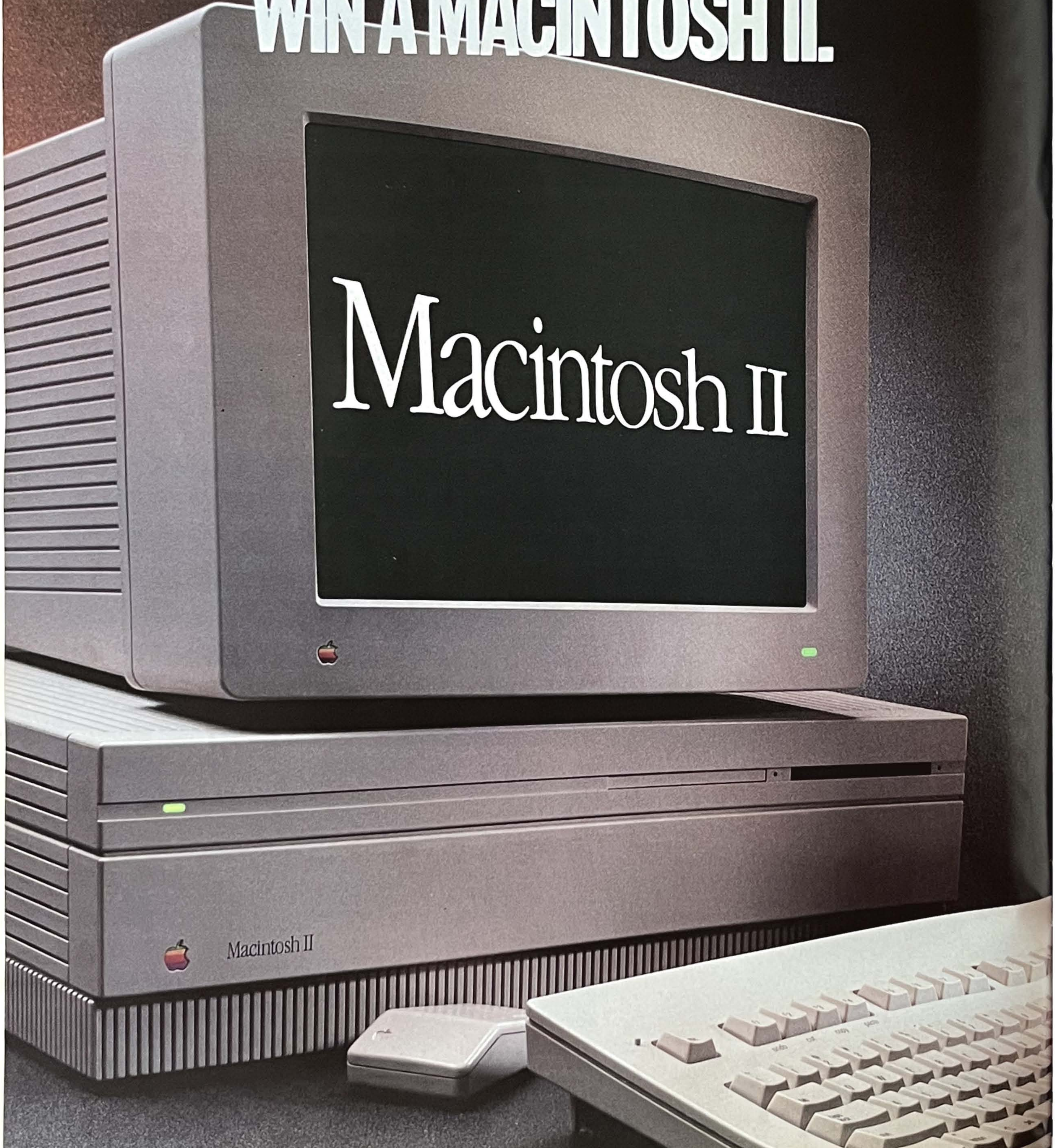

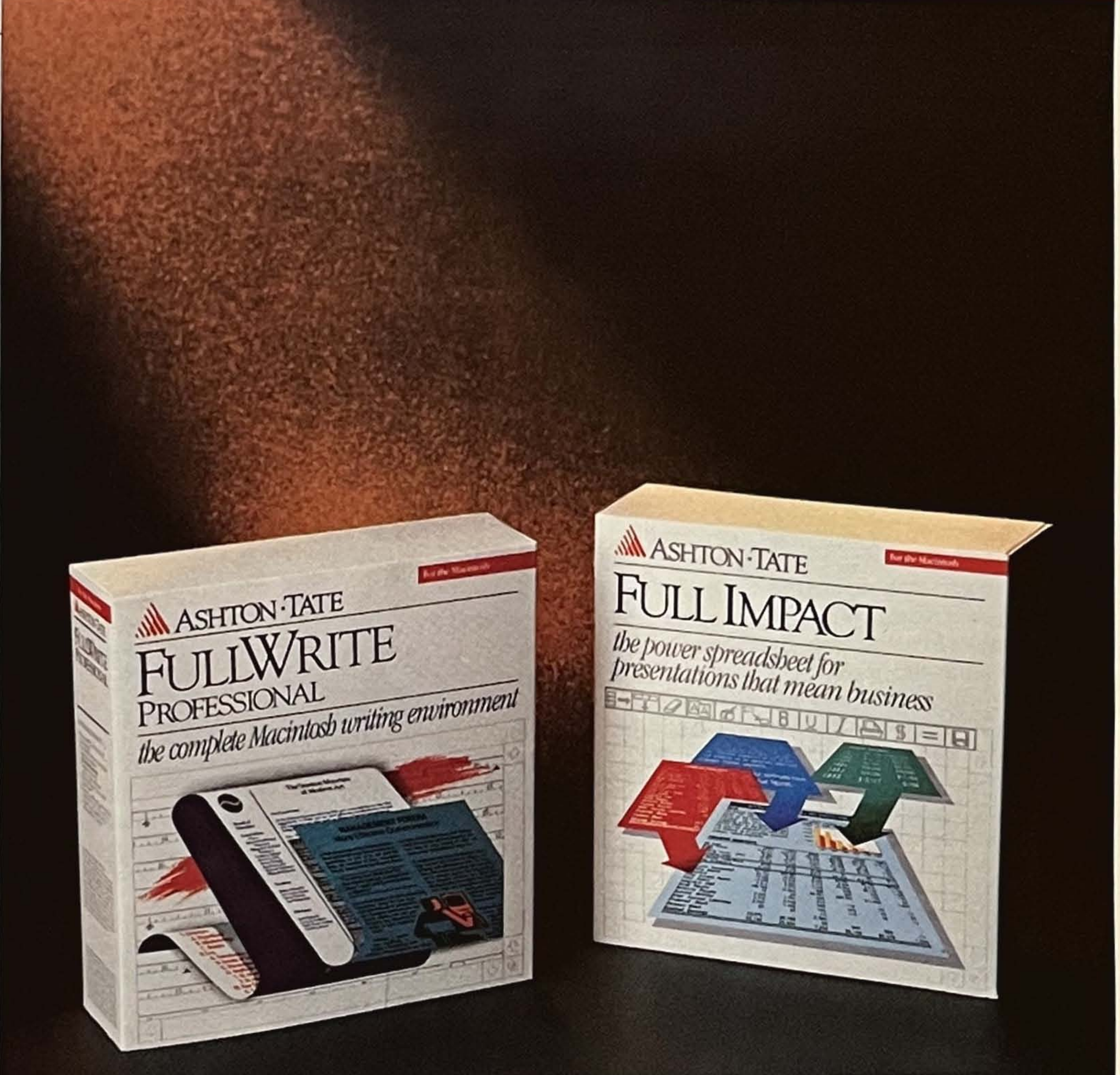
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Editorial

Mac managers must look beyond computers

Sometimes we get so caught up with cables, networks and applications that we forget that the Mac is a tool to help organizations reach their corporate goals. That holds true for users as well as information managers, who need to move from a myopic computer-oriented focus to one that more closely follows the needs and concerns of their companies.

Today's Macintosh system managers have a fairly easy job. The Macintosh continually seems to offer interesting new technology and innovations to simplify Mac managers' lives. And by its nature the Macintosh generates enthusiasm among users, who take a personal interest in the Mac's success within corporate work groups. But in two years or so, that could change in much the way that the jobs of PC-oriented information center managers have changed.

This once-ballyhooed group of corporate microcomputer managers has for years concentrated on the fundamentals of internal support — purchasing systems, training users and dealing with vendors. Many have handled these tasks so well that, especially in view of a PC platform that seems to be coasting on its own inertia, they are in danger of being taken for granted by their companies' upper management.

In fact, recent meetings of information center managers have focused on this issue of perceived job obsolescence. Their solution to the dilemma is to align themselves more closely with corporate goals. People who manage Macintosh-based systems can avoid this painful lesson by assuming that approach now, before the speed of Mac innovation slows to where their jobs become reduced to support fundamentals.

The IC managers' fate could be a lesson.

For this to happen, however, a company's highest management must realize the need for Mac information managers as well as the role those managers can play as consultants and leaders in computer technology.

One way Mac managers can achieve that position is by making full use of the Mac enthusiasts around the company. Today these gurus are expected to help their fellow users in their "spare" time. Moreover, they are penalized for any perceived detriment to their "real" work.

But by going through upper management, Mac information managers could assign formal Macintosh duties to the local work-group enthusiasts. The result for companies would be a larger support group that is strategically placed throughout the company, reducing user frustration and increasing general productivity.

That's a result corporate management can appreciate.

As users become more self-sufficient, information managers need a better understanding of the jobs their computing clients actually do. If the company does primarily scientific work, managers need to understand that technology. If it's a business company, the Mac manager must be familiar with the kinds of business problems users regularly face.

We need not endure the fate of information center managers if we work now to become an integral part of our corporate structure. ☐

LETTERS

Who's victim in graphic traffic?

A larger question as to the use of scanned copyright images (MacWEEK, Aug. 30) is: Who is being hurt? I doubt if the copyright owner is losing any income to scanned images. The person who scanned them had to buy the original, right?

Well, you say, the people who get copies of the scan didn't have to buy the magazine. That's true, but if they are satisfied with a 72-dpi Elle, they probably wouldn't spring for the magazine anyway. A nebulous argument I agree, but it does have some validity.

Now, the uses of these scanned images in published material is another matter. They should not be used in any manner in publishing. That really would be an infraction of the copyright holder's rights.

Why do graphics hackers crank out all of these scans? Well, I've spent hours in fat bits fine-tuning a graphic to make it look as much like the original as possible. I never thought of myself as stealing the original; it was more akin to the ultimate compliment. I've spent hours so that I can show "this other" artist's work.

David Carson, director
audio visual services
Odessa College, Odessa, Texas

A look like all the others

Why did you do it?! Now MacWEEK looks like PC Week. Bleah! (I've never picked up a copy of PC Week just because it looked interesting.) So the original was a little weak in some areas, but did you have to give it a completely new (generic, sans serif) look? Follow Publish! magazine's lead and ask for comments from your readers.

Karen J. Holloway
research biomedical engineer
Veterans Administration
Medical Center
Palo Alto, Calif.

MAC SOAPBOX/*Peter Black*

A tool for improving education

There was a time when you could be reasonably sure of getting your kid a good education. That time has passed.

The reasons are twofold. First, a good education is getting very expensive. My boy, Sean, is 5, and they say the tag for college will run in the hundreds of thousands of dollars. Ding-Dong School isn't cheap, either.

Second, the production line approach to school doesn't work. Teachers are not interchangeable machine tools, and good ones are hard to find. Children, for that matter, are not sheet metal from which smart adults can be stamped.

The reality is this: Everybody can expect to have a mediocre education provided for their children. Children of very wealthy people will have access to very fine educations.

This is better than can be said for most of the world today, and still infinitely superior to what we had in this country at the beginning of this century. But it's not good enough for us.

If the situation is left to stand, it will be vastly frustrating for the millions of middle-class Americans who are smart, work hard and are already unhappy about the fact that they may never be able to afford to own a real house.

In the computer industry, if we set our minds to it, we can make things a lot better than that. Currently, we have in our hands the makings of a totally new approach to education. It won't replace the existing educational system. Rather, it will be built at its side, in our homes.

This industry can give parents the tools to augment their children's educations, to see to it that they know where to find Thailand on a map as well as ensure that they can read and write and convey complex ideas and observations in letter and tongue. These tools will go further than that. They will enable the understanding of complex math and the kind of scientific and technological understanding that our teachers and schools fail so miserably at imparting today.

The hardware will be nothing more than currently available Ataris and Macs, equipped as they are with text, graphics and sound reproduction. The probable delivery medium will be CD-ROM.

The key, however, will be software. It will require an elegant mix of the best we have in sampling, digital imaging, typography, computer animation and expert systems.

All together, it will have to be even better than Apple CEO John Sculley's vision of the Knowledge Navigator and priced for less than what you would pay for a VCR and a color TV.

Is it necessary? Yes, if we and the things we hold dear are to survive in this otherwise dismal world. Is it possible? Of course it is. But it's more than that. If you are lucky enough to work in this industry, it's a responsibility. Perhaps a destiny.

Thirty years ago, Edward R. Murrow saw a similar opportunity with another young technology, one not nearly so rich in potential as the one for which we are stewards today.

"Unless we get up off our fat surplusses," he said to a meeting of radio and television insiders, "and recognize that television in the main is being used to distract, to delude, amuse and insulate us, then television and those who finance it, those who look at it, and those who work at it may see a totally different picture too late ... . This instrument can teach. It can illuminate. Yes, it can even inspire. But it can do so only to the extent that humans are determined to use it to those ends. Otherwise it is merely a group of lights and wires in a box."

Thirty years ago, they could laugh off such high-minded talk. A fine education seemed assured for all, so no one needed to do anything special with TV. We cannot afford such self-satisfaction and laziness today. ☐

Peter Black is president of Xiphias, a supplier of digital typefont technology to the microcomputer industry and the publisher of "The Timetable of Science and Innovation."

WASHINGTON SQUARE

IBM's moment of weakness

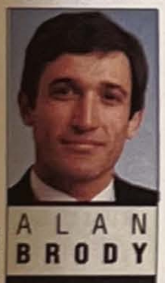
Apple has an opportunity to exploit IBM's loss of momentum

If Apple ever has a chance to go for IBM's jugular it is now, right now.

Three events have occurred recently that represent a warning and an opportunity for Apple to take control of the personal computer market.

One is the steep decline in Microsoft's stock, dropping in less than a month from a high of around 65 points to a low of nearly 50. This occurred partly because people doubt whether Presentation Manager for IBM's PS/2 Series will be on time and partly because of additional delays in the Apple-Microsoft court case.

Next, IBM lifted its dealer quotas on sales of the PS/2 machines because it could not enforce them without extreme resistance. Apparently, the market still has a high enough demand for AT compatibles that dealers simply cannot take them off their shelves.



And third, IBM introduced its PS/2 Model 35, which uses the AT architecture. Many observers view this as a public admission of failure to set a new Micro Channel standard.

All of this should be seen as a warning and, in particular, an opportunity for Apple.

The warning comes from Wall Street, dealers and corporations, which have made it clear that they want an open standard — one that IBM leads but does not monopolize.

Apple needs to take special notice of this, because it was IBM's attempt to emulate Apple that got the Armonk, N.Y., company into trouble in the first place. Tired of suffering through its traditional mix-and-match environment, IBM wanted to impose Apple's all-in-one approach that enables it to sell everything — CPU, monitor, drive and printer — to its customers.

Now, by playing both the AT and PS/2 architectures, IBM could come out of this even stronger than before. Offering the old bus standard, even as it licenses its new architecture to companies like Dell and Tandy, allows IBM to drive home the advantage of leading an open standard endorsed by innumerable vendors. In contrast, Apple leads a standard of one.

Apple must change that position now.

Apple was shrewd enough to realize that IBM PC connectivity was the key to the future. But now it must move on to a new tack — interoperability. In other words, Apple has to provide ways for other manufacturers to bring the Macintosh operating system into their environments.

The price is well-known, but well worth it: Apple has to license its ROM, but with a twist.

The first step is to produce a PC equivalent of the AST board for the Mac. This could be a plug-in Mac emulation board for PCs along the lines of the Magic Sac for the Atari, which recycles old 64-Kbyte ROMs to achieve a reasonable degree of compatibility. Apple can make the board or license it.

Apple won't get particularly rich on such a product, but it will make an incredibly powerful strategic statement. The result will be widespread acceptance of Macs in corporate America. And that means big sales.

And if Apple is serious in its intention to become the No. 1 microcomputer company, it must offer an accessible solution. That means letting other vendors in on its standard.

Apple should be encouraging companies to build Mac-based platforms that are optimized for specific environments. I don't mean adding boards to Mac IIs, but actually licensing the ROM to builders of customized machines. Examples would be engineering and architecture workstations, animation boxes with specialized genlocking, frame caching and I/O devices — even automated bank tellers and HyperCard information centers for public use.

Apple's work with Texas Instruments and Symbolics on Mac LISP machines is a step in that direction. But Apple has it the wrong way around. It should license the ROM and whatever else TI and Symbolics need to make *their own* machines. These markets are small enough that Apple can afford to let go and, in return, send the message that the Macintosh is a new open standard.

If Apple wants to be bold, it shouldn't wait around for Display PostScript boards to appear on '386 PCs. It should license the ROM to companies responding to the professional publishing industry's need for accurate previewing with Display PostScript machines. Even if that includes companies like NeXT.

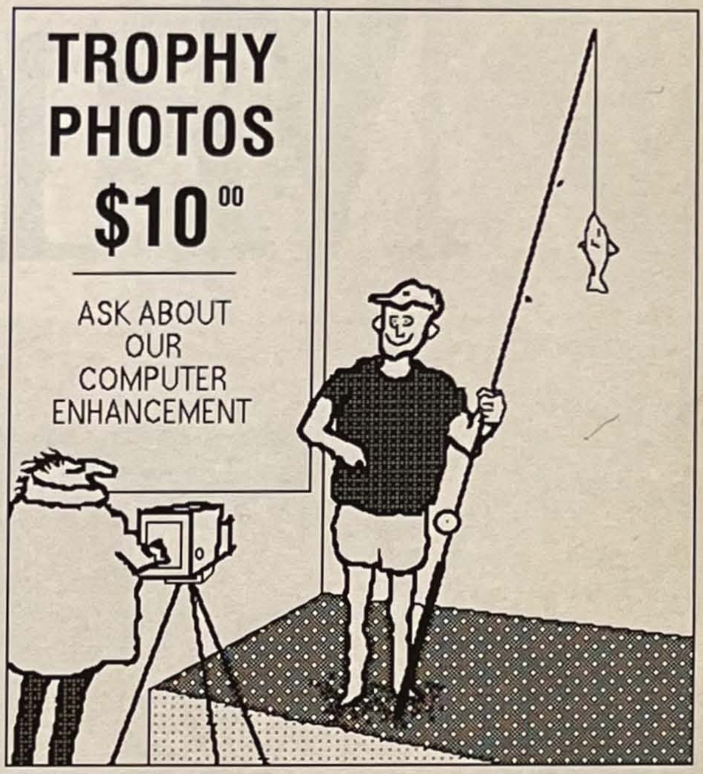
Think about it. When niche car companies like Excalibur and Gazelle use Ford and Volkswagen chassis they do less to undermine the sales of the big companies than reinforce them as standards. Apple's small loss in revenue would be compensated by the response of corporate buyers who would rest easier if buying from Apple didn't tie them to a single source. Apple, after all, would still control the environment.

The fact is, Apple needs to expand the market in order to grow. That means exchanging ownership of a closed market for domination of one that's open.

Now that IBM has a new ad agency, we can expect those wimpy M*A*S*H characters on TV to give way to some real head-to-head marketing. When it does, Apple's former ace in the hole — its proprietary system — will become the very thing that IBM will attack. IBM has learned, the hard way, the value of an open standard.

If Apple doesn't breed its own competition, it will run the risk of becoming isolated.

The only solution is licensing. And Apple should do it while it's in a position of strength rather than wait until forced by the market, creating the appearance of weakness. Be No. 1, Apple. License now. □



SCREEN SHOTS/*Louis Dunn*

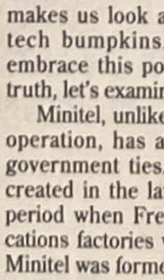
ROUND ROBIN/*Society*

The push to get videotex to U.S.

RBOCs fighting to get into information service business

France is now showing us how to network a nation with computers. Its Minitel operation is the world's largest videotex service, linking together nearly a quarter of that nation's population.

Many companies, including Minitel itself, have tried for several years to adapt France's videotex system to U.S. tastes. The results have been less than spectacular despite the best efforts of such major corporations as IBM, Sears, CompuServe and General Electric.



It is tempting and perhaps even expedient to blame the failure of U.S. videotex on some intellectual or moral flaw in the American character. Compared with Americans, Minitel-equipped French citizens seem to possess a certain electronic savoir-faire. The success of the French system makes us look and feel like high-tech bumpkins. But, before we embrace this popular canard as a truth, let's examine the facts.

Minitel, unlike any U.S. videotex operation, has always had strong government ties. The service was created in the late 1970s, during a period when French telecommunications factories were virtually idle. Minitel was formed by France's government-owned telephone company to provide French workers with jobs (building terminals and associated equipment) and to give Gallic prestige a shot in the arm.

But while France's government was pouring millions into Minitel, the U.S. government was taking the opposite approach. Not only did our lawmakers adopt a laissez-faire attitude toward videotex, they specifically barred U.S. telephone companies from entering the field.

In retrospect, the blocking move appears lamentably shortsighted. Telephone companies are the best-qualified companies to place videotex terminals inside U.S. homes.

Nevertheless, after years of bureaucratic discrimination, America's telephone companies may finally be on the verge of obtaining access to the videotex field. Although federal law, as interpreted by U.S. District Judge Harold Greene in the divestiture of AT&T, effectively prevents the regional Bell operating companies (RBOCs) from originating on-line data, the companies are now enthusiastically exploring methods of circumventing Greene's authority.

For example, in the U.S. House, the RBOCs are backing House Concurrent Resolution 339. Among other things, this bill calls for the "full participation of American industry in the provision of telecommunications equipment and services."

The legislation's congressional supporters take particular delight in Greene-bashing. "Because a single federal judge has established himself as a permanent regulatory force in the industry [the RBOCs] are not permitted to enter businesses vital to America's future, like providing information services," said Rep. Thomas J. Tauke (R-Iowa).

Across the aisle, Rep. Al Swift (D-Wash.) claimed that keeping the RBOCs out of the market has restricted information services to "upscale citizens with either a particular hobby or interest, such as monitoring the financial markets."

The RBOCs are also putting heat on the Federal Communications Commission. After years of non-stop lobbying, the companies have finally persuaded the FCC to drop its opposition to having them enter the cable TV business.

The RBOCs don't want access to cable TV for the purpose of showing "Mork and Mindy" reruns. They see cable as an ideal way to integrate video and data services, pushing the videotex industry onto a new level and into a new market.

If the RBOCs' pressure campaign proves successful and the government allows the companies access to videotex, a home-grown Minitel-like system connecting millions of people may at last take root in America.

Such a system will launch vast changes in our culture. Stores, libraries, schools, the Postal Service and hundreds of other institutions will have to reassess the way they operate. The computer revolution will have finally hit home.

And Mac users and developers will be affected, too. A bare-bones color Mac adapted to videotex use would be one terrific machine.

As they say in France, *tant mieux* (so much the better). □

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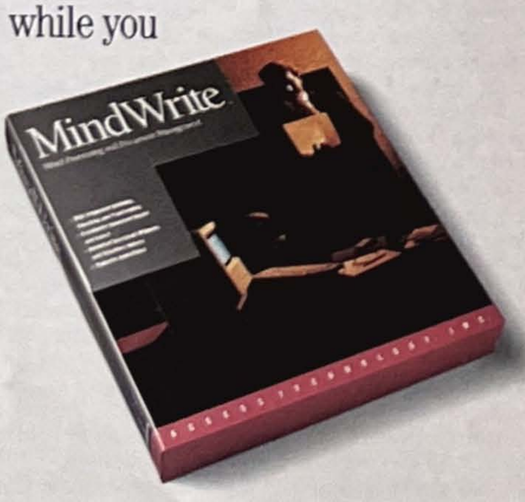

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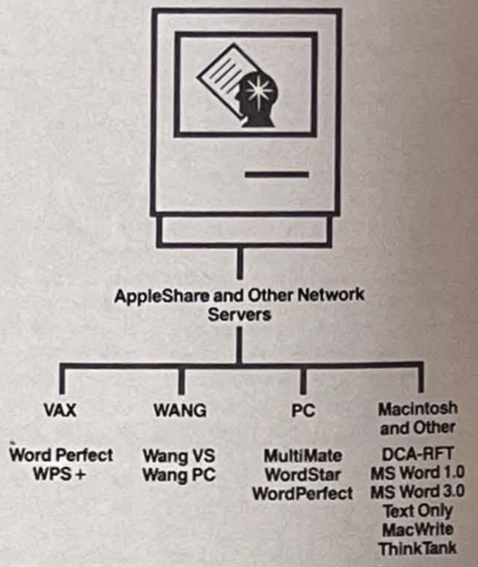

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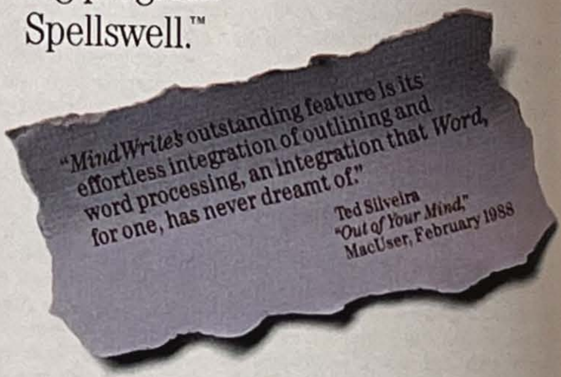

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Ted Silveira
"Out of Your Mind,"
MacUser, February 1988

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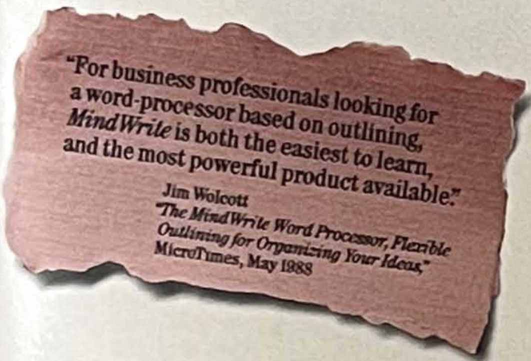
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"The MindWrite Word Processor, Flexible Outlining for Organizing Your Ideas,"
MicroTimes, May 1988

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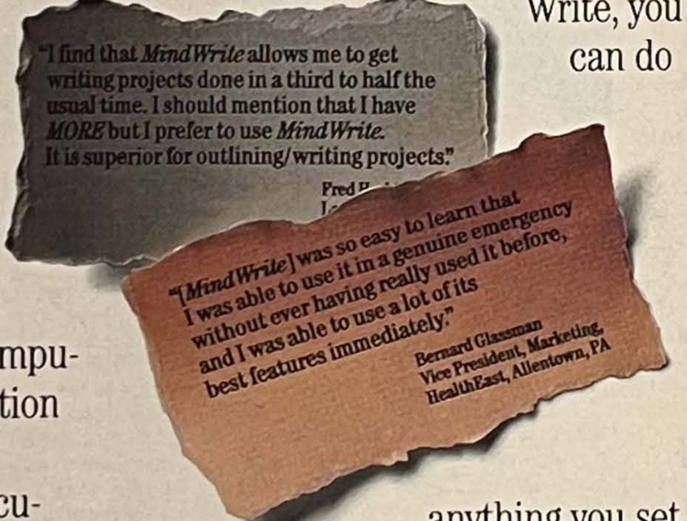
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The Mac's man in government

BY KRISTIN KNAUTH

RESTON, Va. — "The most strategic activity that Apple can be involved in as a company in this country is to be a mainstream supplier of technology to the federal government." That's the gospel according to C. Lloyd Mahaffey, the director of Apple's recently created Federal Systems group (AFSG), who added, "Government strongly influences the direction of both education and business technology."

Mahaffey, the former director of Apple's U.S. education market development, left the company's Cupertino, Calif., headquarters in January to head the federal government offices in this suburb of Washington, D.C. He directs all of Apple's sales, marketing, complex systems and contract management activities for the federal market.

Apple first announced plans to expand its education and business base to the federal market nearly two years ago. Mahaffey's move east was a key step in that process, representing Apple giving federal systems equal priority with business and education — with self-sufficient management, marketing, investment and product development resources. "The market demand for our technology, the size of federal systems activities and the decision to begin building a self-sufficient federal unit dictated sending a senior executive to Washington," Mahaffey said.

Mahaffey signed on with Apple in 1983, having been lured from his post as marketing manager for federal and commercial systems at Honeywell Corp. He said the move "was an easy decision then, and it's been an easy decision for almost five years now. Apple is the only company I've ever seen where an individual can make a difference and is empowered with the chance to do so. At 33, I'm running a major business unit of a corporation. That wouldn't have happened to me at Honeywell."

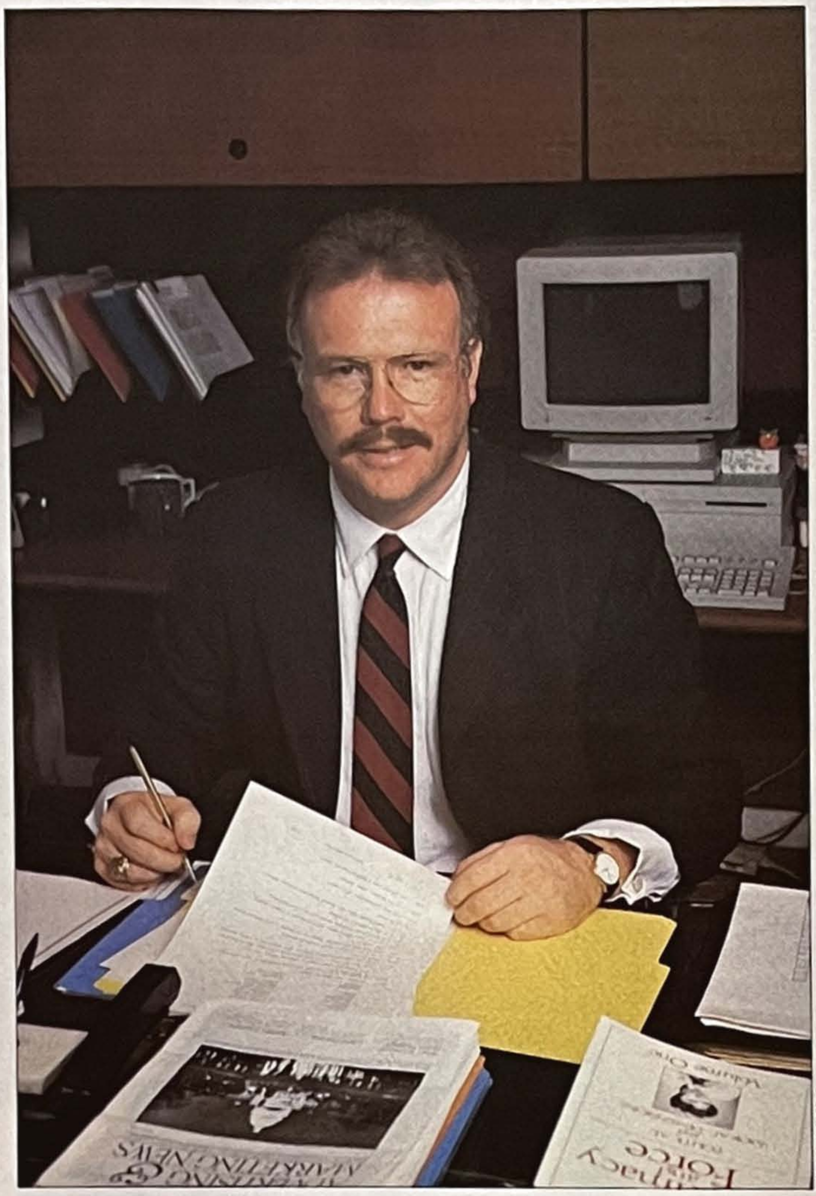
But in running this major business unit of Apple, Mahaffey has his work cut out for him. Federal systems are Apple's fastest-growing market, but the company's slice of the government's $2-billion microcomputer pie remains minuscule, part of a 16 percent segment shared by Apple, Wyse Technology, NCR, Compaq Computer, Wang Laboratories, Unisys and Epson America. Zenith led the field in fiscal 1987 with an overwhelming 59 percent market share, followed by IBM at 9.6 percent, according to General Systems Administration (GSA) figures.

Soon after his arrival here, Mahaffey presided over a doubling of staff to 80 employees and a reorganization of sales and marketing efforts. Apple Federal Government Operations (AFGO), the sales and marketing entity superseded by AFSG, survives as a unit under the group. Part of AFGO was set aside as a separate organization called Complex Systems, Apple's first fully functional systems integration group. That move came about, Mahaffey said, because "we recognized that if we were to participate in major procurements, we needed a dedicated organization that could be a strong teaming partner with systems integrators."

Sales have been divided between a defense and intelligence team and a civilian agency team, allowing AFSG "to focus our resources on like requirements, like solutions and similar procurement mechanisms," Mahaffey said.

Earlier this year AFSG opened new field offices in San Francisco, Dallas, Los Angeles, Boston, Chicago and Atlanta, while transferring a marketing team to Paris to work with Apple Europe. "We're looking at the U.S. government both as a customer and as a market with worldwide reach," Mahaffey said. "We're building a multichannel, multicontinent strategy to meet the needs of that customer."

So far, most federal inroads for the Mac have been made either through individual users — what Apple CEO John Sculley has dubbed the "guerrilla" approach — or through modest agency contracts, like NASA's 1987 purchase of 200 Mac IIs. The largest government procurement to date has been a Department of Defense overseas schools contract for the Apple IIGS, awarded Oct. 30, 1987. The contract called for 4,000 units and is expected to grow to 30,000 in the next three years.



COURTESY APPLE

C. Lloyd Mahaffey, once director of Apple's U.S. education market development, now director of Apple's recently created Federal Systems group: "We're looking at the U.S. government both as a customer and as a market with worldwide reach."

To help secure larger government contracts, Mahaffey said that he plans to give a high priority to consolidating loyalty at the grass-roots level, where a network of Mac fans led to the creation of the largest Apple users group in the world, the 5,729-member Washington Apple Pi. Meanwhile, AFSG representatives have begun calling on mid-level and senior information resource managers and senior agency decision makers.

"We're highly visible, with a high-quality, positive identity in the market," said Mahaffey, "but one of our biggest hurdles is just getting representatives out to all the customers interested in learning more about Apple." Mahaffey said that he is confident that the representatives' work will pay off: "Within the next year," he predicted, "we'll have a lot of stories to tell."

Mahaffey's confidence is based in part on the unexpected boon for Apple resulting from the introduction of IBM's OS/2. "With the change in direction from MS-DOS to OS/2," he said, "there's a lot of confusion in the market right now. It's not the same ball game." He noted that the Mac is the only platform currently in the market that runs MS-DOS, UNIX and the Mac operating system, and he has taken care to promote strong communications tools that make it easy to plug into a variety of minis and mainframes. "The federal government is probably the single largest heterogeneous computing environment in the world," Mahaffey said. Within that environment, he said, "there is a little bit of everything."

"We've been able to address the MS-DOS compatibility issue," Mahaffey said. "I'd be foolish to say we don't recognize the installed base of DOS products, but the government also is recognizing the value of human interface, graphics and all the things on which Apple has built its technology."

The Mac is compatible with Open Systems Interconnection (OSI) and Government Operating Systems Interconnection Profile (GOSIP) applications through its equity positioning with Touch Communications, a developer of software for OSI networks. "We're probably one of the companies out in front with OSI capability," Mahaffey said. He said that Apple is also participating in the development of POSIX, the proposed UNIX standard, which he characterized as the wave of the future for the federal market because of "the government's desire to maintain a highly competitive, highly useful infrastructure."

Sculley, of course, has touted A/UX, Apple's version of UNIX, as the major factor in qualifying the Mac for the federal market. Mahaffey does not disagree. He predicted, in fact, that UNIX-based products will account for a large majority of Macintosh penetration into the government in the next five years. A/UX complies with System V, the globally accepted version of AT&T's UNIX, which could attract UNIX users into the Mac fold. It also could allow Mac enthusiasts in federal agencies to use UNIX compatibility as an excuse to get the Mac products they want through the government gates, even if they plan to stick with the traditional Mac operating system once the Mac is on their desks. But as Mahaffey acknowledged, A/UX will require Mac users to learn a new operating system, more difficult than the Macintosh Finder or even DOS.

Another factor Mahaffey said he is counting on to help the Mac's federal penetration is CD-ROM, which he said has a "huge potential for the government market." While analysts have called CD-ROM a difficult sell, Mahaffey said he is comforted by the fact that "the government is a technologically literate customer, with a lot of infrastructure for looking at new technology. Some of the hurdles our other segments might face are less of an issue here."

And taking off from CD-ROM, Mahaffey said, is the whole multimedia environment. "One of most exciting things for me about going into the government market, with my background in education, is the tremendous learning and training opportunities there," he said. "CD-ROM, interactive videodisc and multimedia learning systems will be tremendous tools inside government, and Apple, springing off of our education expertise, can be a major contender in that market."

A major contender in certain market segments, perhaps, but can Macintoshes ever replace IBM products and clones as the federal standard?

Ask that question of C. Lloyd Mahaffey and you get a question in return. "What is the 'federal standard'? Everything is changing now. When you think about federal standards in the future, you've got to think, 'What will the human interface standards be? The communications standards? The operating systems?' I think Apple is going to be a strong player. What our market share will be over time, what anybody's market share will be, is going to be defined by how well we meet the needs of the customer." □

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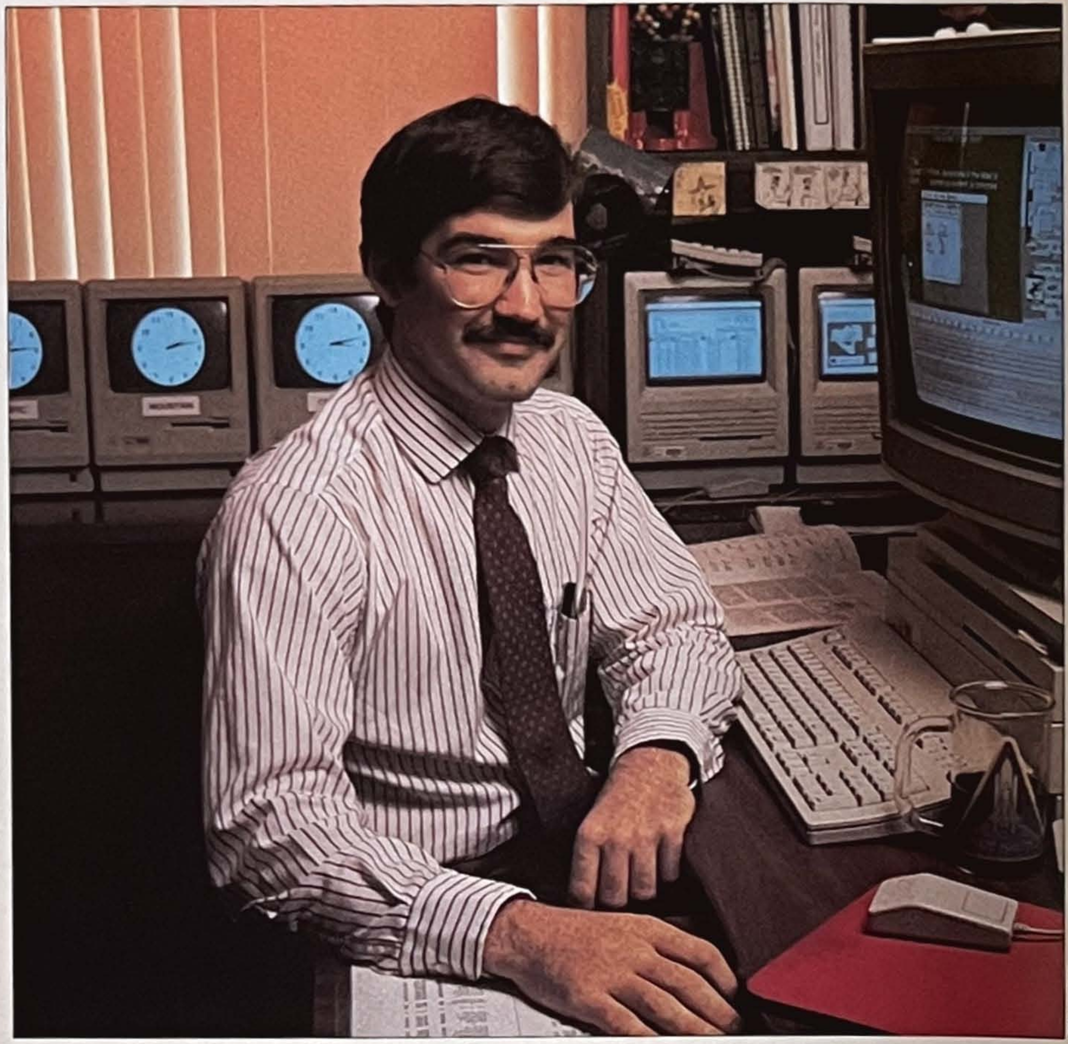
IN PROFILE/**NASA**

Macintoshes explore the final frontier

Mac-to-VAX communications software launches the Macintosh into deep-space research



Dave Lavery, senior computer systems scientist at NASA's headquarters in Washington.

PAUL FETTERS

BY ELISABETH DUNHAM

WASHINGTON — Scientists at NASA have developed Macintosh software that streamlines what was once a tedious design process, transforming simple computer illustrations into colorful presentation graphics. Now, from deep space to Capitol Hill, MacTAG software is taking NASA scientists where no Mac has gone before.

MacTAG allows MacDraw illustrations to be fed directly into Tell-A-Graf, a full-color software system for a Digital Equipment Corp. VAX minicomputer. It cuts dozens of hours off the preparation of status reports and other technical documents that require graphics, according to Dave Lavery, a senior computer systems scientist at NASA headquarters here. Lavery is also one of the four developers of MacTAG; he and three NASA colleagues developed the program last year. Before the introduction of MacTAG, Tell-A-Graf users were required to sketch drawings on graph paper, convert them point-by-point into Cartesian coordinate pairs and finally key the coordinates into the computer system using Tell-A-Graf command strings. With MacTAG's ability to transform MacDraw sketches directly into the Tell-A-Graf system, graphics production has become both quicker and less error-prone.

Besides cutting production time on some drawings and illustrations down to an hour, MacTAG also allows more users than ever to participate in producing the documents. Only a handful of artists were producing graphics in the pre-MacTAG days, but now secretaries and jet-propulsion scientists are using MacDraw to produce illustrations that can be output through the VAX.

When linked with a Matrix QCR color film recorder, the system can quickly produce a range of multicolored output, including slides, overheads and view graphs. MacTAG, a standalone conversion program, resides on a host cluster of DEC VAX 11/785 computers, which are also used to execute the Tell-A-Graf software.

According to Lavery, NASA is still finding new applications for MacTAG. "The simplest stuff would be a word chart or a bar chart," he said, adding that MacTAG uses can range "all the way up to the detailed, complex technical drawings of any new technology or power systems we have. We typically produce a series of colorful, high-quality 8-by-10-inch view graphs used during a management status review or taken up to Capitol Hill for a budget briefing."

MacTAG requires the use of Tell-A-Graf, a restriction that has limited NASA's use of MacTAG. Outside of NASA headquarters, only two NASA sites, the Jet Propulsion Laboratory in Pasadena, Calif., and the Ames Research Center in Mountain View, Calif., have Tell-A-Graf and are users of MacTAG.

Outside of NASA, Lavery said, at least a dozen private companies and one university have begun to use MacTAG. Among the users are the San Diego Super Computer Center, General Atomics of San Diego and Rutgers University of New Brunswick, N.J.

Since the introduction of MacTAG, many NASA employees have gained access and familiarity with NASA's small army of Macintoshes. NASA headquarters has installed between 250 and 300 Macintosh computers, nearly half of them in Lavery's department, the Office of Aeronautics and Space Technology. More than 100 NASA employees are now using Macintoshes to contribute data to the system, Lavery said.

While MacTAG development has speeded the transformation of simple MacDraw designs into complex graphics, equally important in computer-aided design will be the reverse process of transforming hard-copy images into MacDraw data files.

NASA developers are already developing HyperCard applications to accelerate this process, according to Lavery. The advantage of HyperCard use is that it standardizes data formats. "The particular software that the researcher uses is effectively irrelevant," Lavery said. "The researcher just takes the data, captures it, and then dumps it into a HyperCard stack," without losing proper format or layout.

"We usually start out with a Macintosh-generated image and move it down to Tell-A-Graf for generating hard copy," he said. "But we also had several data systems on the VAX that were running Tell-A-Graf. We're moving those images to the Mac, capturing them and then installing them in HyperCard."

Using HyperCard and MacTAG will allow research scientists to pass results back and forth from a lab to headquarters and allow project managers to quickly use them in arguments for research project budgets, said Lavery, who called the HyperCard-MacTAG combination "virtually limitless."

With the addition of MacTAG, that's a phrase that now applies to much of the graphics capabilities at the three NASA sites with access to Tell-A-Graf. □

IN PROFILE/**GOVERNMENT DTP**

Uncle Sam's desktop lab

BY KRIS HERBST

GAITHERSBURG, Md. — Here in the suburbs of Washington, D.C. — a city that revolves around the management of secrets — sits a relatively undiscovered computer lab. But if the existence of the federal government's Electronic Publishing Laboratory sometimes seems like a secret, that's certainly not by design: The lab, which is probing the technological limits of desktop publishing, is available as a hands-on showroom for federal employees and members of the public to evaluate and compare leading desktop publishing products.

Located on the sprawling campus of the National Institute for Standards and Technology (NIST, formerly the National Bureau of Standards), the lab contains a variety of personal computers and workstations, including two Mac SEs and a Mac II, a minicomputer, nine printers and a scanner, all connected in various configurations via AppleTalk or Ethernet LANs. Lab personnel use this array of hardware to try out publishing, communications and applications programs.

"I don't know of any other labs that are designed for looking at and assessing different systems and that are an open showcase where industry and government users can come in, use the equipment and get advice," said Lynne Rosenthal, project leader of the lab and a member of NIST's 12-person Office Systems Engineering group.

Rosenthal described the lab as "a cooperative project between NIST and vendors to investigate electronic publishing technologies and associated standards and to look at broader office systems." Vendors have loaned the lab software and hardware and are providing technical assistance to Rosenthal and her staff.

Planning for the lab began two years ago, when the first desktop publishing systems began to appear on the market. "We could see the beginning of all the hype," Rosenthal said. The lab set out to help federal agencies evaluate the different systems by making an objective study of each product's capabilities and drawbacks.

"We don't tell people that one system is better than another, but we'll tell them what some of their options are, what they should be looking for and what some of the questions they should be asking are," Rosenthal said. "At the same time, we talk to vendors and tell them what the users are telling us about their applications and requirements."

Adobe Systems of Mountain View, Calif., developer of the PostScript page-description language, helped the lab obtain print-

Continued on Page 32

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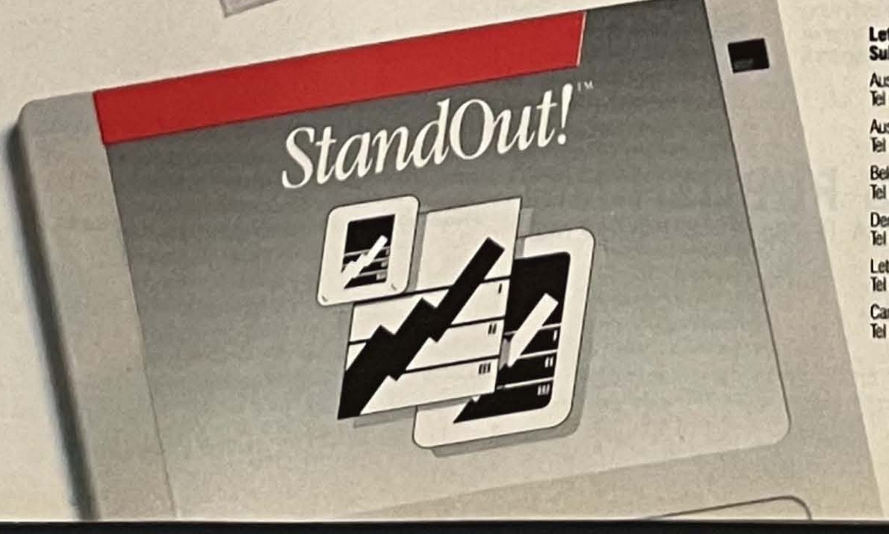

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Continued from Page 30

ers and other equipment by contacting the OEM in its networks and encouraging them to lend equipment. As a result, all of the lab's printers are PostScript-compatible, although the lab will soon be installing a Xerox publishing system.

Each month, 20 to 30 users or potential buyers of desktop publishing equipment visit the center for product demonstrations or a basic orientation to the capabilities of desktop publishing systems. "Our latest round of demonstrations," said Rosenthal, "has shown people what problems arise when you create information on one machine and then transfer it to another system."

There are few conformance tests to compare the conversion performance of commercial software packages that import information from other programs, Rosenthal said. "You have to take the vendors' word that they do the job. Often we have found that they do the job, but they might not do everything. We've noticed that a lot of import filters handle text very well, but don't convert complicated text — like formulas, footnotes or anything other than regular typed paragraphs.

"Embedded in all of this is the problem of what to do about fonts if you print the same document on two different printers," Rosenthal said. "You're using different character metrics, so the spacing between characters is different and you throw off your pagination."

GARY KIEFFER

Lynne Rosenthal, project leader of the Electronic Publishing Laboratory, a hands-on DTP showroom.

To help eliminate these problems, the lab's staff spends most of its time on the development of standards for the world of desktop publishing. Staffers are working with outside committees, the International Standards Organization and the American National Standards Institute (ANSI) to come up with standards for three new international document standards: Standard Page Description Language (SPDL), Standard Generalized Mark-up Language (SGML) and Office Document Architecture (ODA).

The SPDL standard would allow graphics to be transferred from one computer to any other for on-screen viewing, or to any printer regardless of which page-description language the printer uses or whether the correct printer driver has been installed in the publishing package. According to Rosenthal, the Electronic Publishing Laboratory has been very active in writing a draft of the standard, which is expected next year. Rosenthal added that she expects the new standard to be quickly adopted by most software companies, as was PostScript.

The SGML standard will provide a common mark-up language for technical documents so that the documents can be transferred from one system to another without losing a standardized format, even if the format is very complex.

The lab is developing a software tool called a document type definition (DTD) generation tool that allows a computer user who is not trained in programming to create or edit standardized formats for documents using the SGML standard.

"You can use SGML in desktop publishing," Rosenthal said. "It's a way of tagging documents — you can tag your document on a PC or the Macintosh and then feed it into higher-level publishing systems." As with all work generated by the lab, the SGML syntax eventually will be put in the public domain.

The lab is also working on the ODA international standard. ODA is intended to be a sort of universal filter that will permit a document created on any hardware and software combination to be converted in a single step without losing any of the information contained in the original, so that it can be viewed and edited on any other system. Unlike the SGML standard, ODA will be capable of transferring geometric and raster graphics and text formatting.

"ODA has been accepted by many of the U.S., European and Asian vendors as the way to interchange desktop publishing documents," Rosenthal said. "It's an international standard, but there are no implementations, so we're very anxious to actually get implementations marketed."

As part of that process, Rosenthal said, the Electronic Publishing Laboratory is taking part in a pilot project being conducted by Carnegie-Mellon University of Pittsburgh and the University of Michigan of Ann Arbor under a grant from the National Science Foundation.

"The idea is to be able to electronically interchange documents between the two universities and the NSF, each of which is using its own documentation systems," said Rosenthal. "We hope to write a translator for interchanging our WordPerfect documents with the two universities, which will be using more powerful manuscript-processing software, without using an import filter or a conversion package."

As the move toward standards quickens, Rosenthal said, desktop publishing software technology is improving. "The vendors are getting better. They're starting to come up with ways of managing the heterogeneous environment. And, fortunately, they're starting to look at the standards that are out there. As these standards become real products, the situation will get even better. And as we start using the lab more and more to implement these standards, the lab will have a major impact."

And perhaps, in the process, it will become less of a secret. ☐

Mitzi Waltz contributed to this report.

MICROSEEDS'

Screen Gems

a collection of screen utilities for the Macintosh II

ColorDesk

Stop yawning at that dull gray desktop! ColorDesk, by Paul Mercer, is a cdev that personalizes your screen by displaying a background picture (any PICT file, color or black-and-white) of your choice in place of the usual gray desktop pattern. (At least 2 MB of memory recommended for ColorDesk).

Dimmer

This great utility by Chris Derossi "dims" your screen while you're not using it, to prevent burn-in. Other "screen saver" utilities erase the screen, but Dimmer simply darkens the screen. Specify the time delay before dimming (1 - 120 min), and the dimming level (0% - 100%). Dimmer supports multiple monitors.

Switch-A-Roo

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Screen Gems also includes
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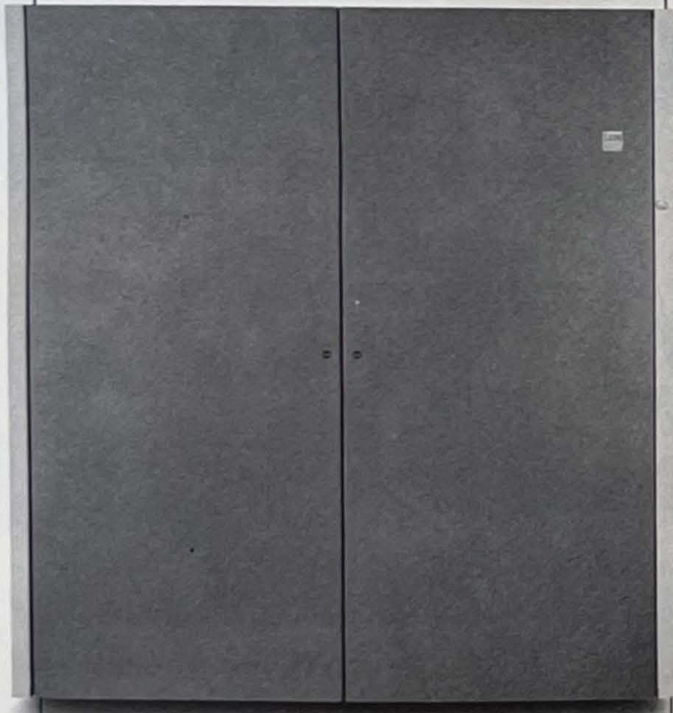

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- ☐ Kaypro 286-16
- ☐ Kaypro 386 Series
  - ☐ Model A
  - ☐ Model E-40
- ☐ Kaypro 2000 +

Leading Edge
- ☐ Leading Edge PC, Model D
- ☐ Leading Edge PC, Model D2
- ☐ Leading Edge Model MH

Mitac
- ☐ Paragon 88
- ☐ Paragon 286
- ☐ Paragon 286S
- ☐ Paragon 286V
- ☐ Paragon 286VE
- ☐ Paragon 386
- ☐ Paragon 386E

Mitsubishi
- ☐ MP 286 Series
  - ☐ Model 310
  - ☐ Model 320
  - ☐ Model 340
- ☐ MP 386

NCR
- ☐ PC6
- ☐ PC710
- ☐ PC810
- ☐ PC916
- ☐ 3390
- ☐ 3392

NEC
- ☐ PowerMate 1
  - ☐ H200-1B
  - ☐ H201-1B
  - ☐ H202-1B
  - ☐ H203-1B
- ☐ PowerMate 2
  - ☐ Model H500B
  - ☐ Model H501B
  - ☐ Model H502B
  - ☐ Model H503B
- ☐ PowerMate 386
  - ☐ Model H600B
  - ☐ Model H601B
  - ☐ Model H602B
  - ☐ Model H603B
- ☐ PowerMate 386/20
  - ☐ H601E-1B
  - ☐ H603E-1B
  - ☐ H605E-1B
  - ☐ H606E-1B
- ☐ PowerMate Portable
  - ☐ APC-H701
  - ☐ APC-H702
- ☐ MultiSpeed
- ☐ MultiSpeed EL
- ☐ MultiSpeed HD

Nokia Data
- ☐ Nokia PC286
- ☐ Nokia WS286
- ☐ Nokia TT/286
- ☐ Nokia WS386
- ☐ Nokia TT/386

Olivetti
- ☐ M280
- ☐ M240
- ☐ M250
- ☐ M290
- ☐ M380 Family
- ☐ M380XP Family

PC's Limited

See Dell
- ☐ PC's Limited 286

Samsung
- ☐ S300
- ☐ S500
- ☐ S5000
- ☐ S5100

Sharp
- ☐ PC-4500 Series
  - ☐ Model 4501
  - ☐ Model 4502
  - ☐ Model 4521
- ☐ PC-7000A/7000 Series
  - ☐ Model 7000A
  - ☐ Model 7100
- ☐ PC-7200 Series
  - ☐ Model 7202
  - ☐ Model 7221
  - ☐ Model 7241

Sun
- ☐ Sun 4/100 Family
- ☐ Sun 4/200 Family
- ☐ Sun 3/50
- ☐ Sun 3/60
- ☐ Sun 3/100 Family
- ☐ Sun 3/200 Family
- ☐ Sun386i Family

Tandon
- ☐ PCX
  - ☐ Model PCX-2
  - ☐ Model PCX-20
- ☐ PCA
  - ☐ Model PCA-1
  - ☐ Model PCA-20
  - ☐ Model PCA-40
  - ☐ Model PCA-70
- ☐ PCA Plus
  - ☐ Model PCA-20 Plus
  - ☐ Model PCA-40 Plus
  - ☐ Model PCA-70 Plus
- ☐ Targa
  - ☐ Targa 20
  - ☐ Targa 40
- ☐ Targa Plus
  - ☐ Targa 20 Plus
  - ☐ Targa 40 Plus
- ☐ PAC 286
- ☐ PAC 286 Plus
- ☐ 386

Tandy
- ☐ Color Computer 3
- ☐ Model 4D
- ☐ Model 102
- ☐ Model 1000HX
- ☐ Model 1000TX
- ☐ Model 1400LT
- ☐ Model 3000
- ☐ Model 3000HL
- ☐ Model 4000

Tatung
- ☐ TCS-4000
- ☐ TCS-7000
- ☐ TCS-8000

TeleVideo
- ☐ Telecat 286
  - ☐ Model FL
  - ☐ Model 101
  - ☐ Model 40
  - ☐ Model ND
- ☐ Tele/386
  - ☐ Model NH
  - ☐ Model 40
- ☐ TelOAS I
- ☐ TelOAS II
  - ☐ Model NH
  - ☐ Model 20
- ☐ TelOAS III
  - ☐ Model NH
  - ☐ Model 40
  - ☐ Model 70
- ☐ TelOAS III/20
  - ☐ Model NH
  - ☐ Model 40
  - ☐ Model 70
- ☐ TeleVideo 9xx Family

Texas Instruments
- ☐ Business Pro

Toshiba
- ☐ T1000
- ☐ T1100 Plus
- ☐ T1200
- ☐ T3100/20
- ☐ T3200
- ☐ T5100

Unisys
- ☐ PW2
- ☐ Series 300
- ☐ Series 500
- ☐ Series 800
  - ☐ 800/16
  - ☐ 800/20
- ☐ Series 850

Victor Technologies
- ☐ VPS IIC
  - ☐ 2691M-1
  - ☐ 2692M-1
  - ☐ 2693C-1
- ☐ VPC 250
  - ☐ 2721M-1
  - ☐ 2721C-1
  - ☐ 2722M-1
  - ☐ 2722C-1

Wang
- ☐ Laptop Computer
- ☐ PC 240
  - ☐ PC 240-1
  - ☐ PC 240-2
  - ☐ PC 240-3
- ☐ PC 280
  - ☐ Model PC 280-1
  - ☐ Model PC 280-2
  - ☐ Model PC 280-3
- ☐ PC 380
  - ☐ Model PC 380-1
  - ☐ Model PC 380-2
  - ☐ Model PC 380-3

Wyse
- ☐ PC 286 Model 2108
- ☐ PC 286 Model 2112
- ☐ PC 286 Model 2200
- ☐ PC 286 Model 2214
- ☐ PC 386 Model 3216
- ☐ Wyse 30
- ☐ Wyse 50
- ☐ Wyse 60

Zenith
- ☐ Z-159
  - ☐ Model 2
  - ☐ Model 3
  - ☐ Model 12
  - ☐ Model 13
- ☐ Z-248
  - ☐ ZF-248-81
  - ☐ ZF-248-82
  - ☐ ZF-248-84
- ☐ Z-286
  - ☐ ZF-286-02
  - ☐ ZF-286-23
  - ☐ ZF-286-25
- ☐ Z-386
  - ☐ Model 40
  - ☐ Model 80

MINICOMPUTERS

AT&T
- ☐ 3B Series

Data General
- ☐ ECLIPSE MV/Family
  - ☐ MV/1400 DC
  - ☐ MV/2000 DC
  - ☐ MV/7800 DCX
  - ☐ MV/2000 DC
  - ☐ MV/7800 XP
  - ☐ MV/15000
    - ☐ Model 8
    - ☐ Model 10
    - ☐ Model 20
  - ☐ MV/20000
    - ☐ Model 1
    - ☐ Model 2

Digital Equipment Corp.
- ☐ DEC MicroVAX 2000
- ☐ DEC MicroVAX 3500
- ☐ DEC MicroVAX 3600
- ☐ DEC MicroVAX II
- ☐ DEC VAX 6200
- ☐ DEC VAX 6210
- ☐ DEC VAX 6220
- ☐ DEC VAX 6230
- ☐ DEC VAX 6240
- ☐ DEC VAX 8250
- ☐ DEC VAX 8350
- ☐ DEC VAX 8530
- ☐ DEC VAX 8550
- ☐ DEC VAX 8700
- ☐ DEC VAX 8800 Series
  - ☐ DEC VAX 8810
  - ☐ DEC VAX 8820
  - ☐ DEC VAX 8830
  - ☐ DEC VAX 8840
  - ☐ DEC VAX 8842
- ☐ DEC VAX 8974
- ☐ DEC VAX 8978
- ☐ DEC VAX 11/700 Series
  - ☐ DEC VAX 11/725
  - ☐ DEC VAX 11/730
  - ☐ DEC VAX 11/750
  - ☐ DEC VAX 11/780
  - ☐ DEC VAX 11/785

Gould
- ☐ MPX

Harris
- ☐ H Series
  - ☐ H100
  - ☐ H500
  - ☐ H700
  - ☐ H800
  - ☐ H900
  - ☐ H1000
  - ☐ H1200
  - ☐ H1500
  - ☐ H1600
- ☐ Harris MCX5
- ☐ Harris HCX5
- ☐ Harris HCX7
- ☐ Harris HCX9

Hewlett-Packard
- ☐ HP 3000 Family
  - ☐ Micro 3000 LX
  - ☐ Micro 3000 GX
  - ☐ Micro 3000 XE
  - ☐ Series 70
  - ☐ Series 925
  - ☐ Series 925 LX
  - ☐ Series 935
  - ☐ Series 950
  - ☐ Series 955
- ☐ HP 9000 Family
  - ☐ Model 319
  - ☐ Model 320
  - ☐ Model 330
  - ☐ Model 350
  - ☐ Model 360
  - ☐ Model 825
  - ☐ Model 835
  - ☐ Model 840
  - ☐ Model 850
  - ☐ Model 855

Honeywell Bull
- ☐ DPS 6+
  - ☐ 200 Series
    - ☐ Model 200
  - ☐ 210 Series
    - ☐ Model 211
  - ☐ 220 Series
    - ☐ Model 221
  - ☐ 400 Series
    - ☐ Model 402
    - ☐ Model 403
    - ☐ Model 404
  - ☐ 410 Series
    - ☐ Model 412
    - ☐ Model 413
    - ☐ Model 414
  - ☐ 420 Series
    - ☐ Model 422
    - ☐ Model 423
    - ☐ Model 424
- ☐ XPS 100 Series
  - ☐ X15
  - ☐ X22
  - ☐ X42

IBM
- ☐ Application System/400
- ☐ Series 1
- ☐ System/36
- ☐ System/38
- ☐ System/88
  - ☐ 4575 Processor Model 20B
  - ☐ 4576 Processor Model 40
  - ☐ 4576 Processor Model 50
  - ☐ 4576 Processor Model 60
  - ☐ 4576 Processor Model 81
  - ☐ 4576 Processor Model 82
  - ☐ 4576 Processor Model 83
  - ☐ 4576 Processor Model 84
  - ☐ 4576 Processor Model 85
  - ☐ 4576 Processor Model 86

ICL
- ☐ DRS 300
- ☐ CLAN

Intergraph
- ☐ 200
- ☐ 250
- ☐ 252
- ☐ 350
- ☐ Micro II

NCR
- ☐ Tower Family
  - ☐ NCR miniTower
  - ☐ NCR Tower Series
    - ☐ 32/200
    - ☐ 32/400
    - ☐ 32/450
    - ☐ 32/600
    - ☐ 32/650
    - ☐ 32/800
    - ☐ 32/850

Nixdorf
- ☐ Targon Family

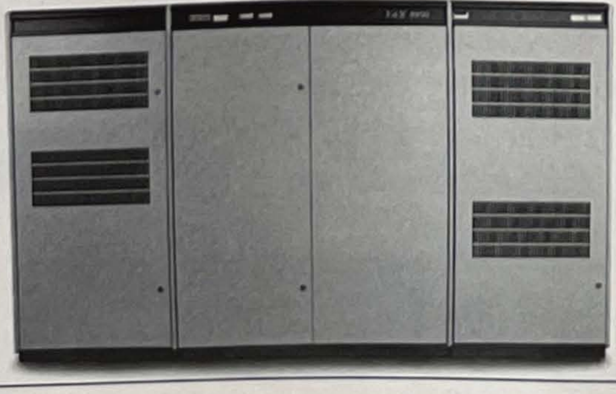
Olivetti
- ☐ LSX 3000 Series

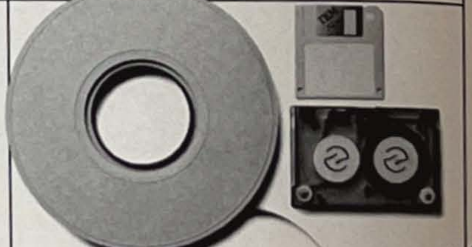
Prime
- ☐ 386 EXL Series
  - ☐ EXL 316
  - ☐ EXL 320
  - ☐ EXL 325
- ☐ 50 Series
  - ☐ Tower Systems
    - ☐ Model 2350
    - ☐ Model 2450
    - ☐ Model 2455
  - ☐ 4000 System
    - ☐ Model 4050
    - ☐ Model 4150
    - ☐ Model 4450
  - ☐ 6000 System
    - ☐ Model 6150
    - ☐ Model 6350
    - ☐ Model 6550

Tandem
- ☐ NON-STOP II
- ☐ TXP
- ☐ CLX

Unisys
- ☐ 5000 Series
  - ☐ 5000/35
  - ☐ 5000/55
  - ☐ 5000/85
  - ☐ 5000/95
- ☐ 6000 Series
  - ☐ 6000/50
- ☐ 7000 Series
  - ☐ 7000/30
  - ☐ 7000/40
  - ☐ 7000/50
  - ☐ 7000/51
  - ☐ 7000/52

Wang
- ☐ VS 5000
- ☐ VS 5400
- ☐ VS 5430
- ☐ VS 5440
- ☐ VS 5450
- ☐ VS 5460
- ☐ VS 5E
- ☐ VS 6E
- ☐ VS 75E
- ☐ VS 7100
- ☐ VS 7110
- ☐ VS 7120
- ☐ VS 7150
- ☐ VS 7310
- ☐ VS 7320
- ☐ VS 5
- ☐ VS 6
- ☐ VS 15
- ☐ VS 25
- ☐ VS 45
- ☐ VS 65
- ☐ VS 85
- ☐ VS 90
- ☐ VS 100



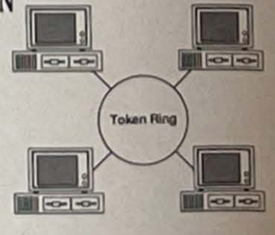


OPERATING SYSTEMS

- ☐ DOS
  - ☐ MS-DOS
  - ☐ PC-DOS
  - ☐ NCR-DOS
- ☐ ProDOS
- ☐ TRSDOS
- ☐ VectraDOS
- ☐ GCOS 6
- ☐ GCOS 7
- ☐ GCOS 8
- ☐ Macintosh
- ☐ MVS
- ☐ OS/2
- ☐ PRIMOS
- ☐ ULTRIX
- ☐ UNIX
- ☐ VM
- ☐ VMS
- ☐ XENIX

TRANSMISSION MEDIA

- ☐ Broadband
- ☐ Fiber Optic
- ☐ LocalTalk
- ☐ Microwave
- ☐ Public Data Network
- ☐ Satellite
- ☐ T1
- ☐ Thick Ethernet
- ☐ Thin Ethernet
- ☐ Token Ring
- ☐ Twisted Pair



YOU'D LIKE.

PERIPHERALS

Boards

- ☐ AboveBoard
- ☐ High Page
- ☐ IBM Token Ring Adapter Card

- ☐ InBoard 386
- ☐ J-Laser Board
- ☐ TinyTurbo 286

Printers, Lasers, Scanners

Apple

- ☐ Laserwriter
- ☐ Laserwriter II NT
- ☐ Laserwriter NT
- ☐ Laserwriter Plus

AST

- ☐ Turbolaser P/S

C. Itoh

- ☐ PW 1550S + NLQ
- ☐ PW 8510S + NLQ
- ☐ ProWriter 310
- ☐ ProWriter 315
- ☐ ProWriter C715
- ☐ ProWriter Jr. +
- ☐ StarWriter D10
- ☐ Jetsetter Laser

Citizen

- ☐ 120-D
- ☐ 180-D
- ☐ MSP-15E
- ☐ MSP-40
- ☐ MSP-45
- ☐ MSP-50
- ☐ MSP-55
- ☐ Premiere 35
- ☐ Tribute 124
- ☐ Tribute 224

Diablo

- ☐ 630 API
- ☐ Advantage D25

Epson

- ☐ DFX5000
- ☐ EX800
- ☐ FX1050
- ☐ FX286E
- ☐ FX850
- ☐ L1000
- ☐ LQ Series
  - ☐ LQ1050
  - ☐ LQ2500
  - ☐ LQ2550
  - ☐ LQ500
  - ☐ LQ850
  - ☐ LQ950
- ☐ LX800
- ☐ MX Series
- ☐ RX Series

Fujitsu

- ☐ RX7100
- ☐ RX7200
- ☐ RX7300

Hewlett-Packard

- ☐ LaserJet
- ☐ LaserJet Model 2
- ☐ LaserJet 2000
- ☐ LaserJet 500 +
- ☐ LaserJet +
- ☐ LaserJet Series II
- ☐ ScanJet
- ☐ Deskjet
- ☐ HP 7475A Plotter
- ☐ HP 7550A Plotter

IBM

- ☐ ProPrinter

NEC

- ☐ LC860
- ☐ LC890
- ☐ P6 Pinwriter
- ☐ P7 Pinwriter
- ☐ P5XL Pinwriter
- ☐ P2200 Pinwriter

Okidata

- ☐ Laserline 6
- ☐ Microline 192 Plus
- ☐ Microline 193 Plus
- ☐ Microline 292
- ☐ Microline 293

- ☐ Microline 393

Panasonic

- ☐ KX-P1080i
- ☐ KX-P1091i
- ☐ KX-P1092i

Star Micronics

- ☐ ND15
- ☐ NR10
- ☐ NR15
- ☐ NX1000
- ☐ NX15

Toshiba

- ☐ PageLaser
- ☐ 321 SL
- ☐ 341 SL
- ☐ 351 SX
- ☐ 351 C-2

Xerox

- ☐ Model 8044
- ☐ Model 4045
- ☐ Model 4075
- ☐ Model 4090
- ☐ Model 8700
- ☐ Model 8790
- ☐ Model 9700
- ☐ Model 9790

Telecommunications

Amdahl

- ☐ 47XX Communications Processor
  - ☐ 4725
  - ☐ 4725E
  - ☐ 4745

Digi-Link

- ☐ Model DLSSTY-01BC

Hayes

- ☐ Smartmodem 2400
- ☐ Smartmodem 1200
- ☐ V Series 9600
- ☐ Personal Modem

IBM

- ☐ 3720 Communication Controller
- ☐ 3721 Expansion Unit
- ☐ 3725 Communication Controller Model 1
- ☐ 3725 Communication Controller Model 2
- ☐ 3728 Communication Control Matrix Switch
- ☐ 7170 Device Attachment Control Unit (DACU)
- ☐ 7171 ASCII Device Attachment Control Unit

- ☐ 7426 Terminal Interface Unit
- ☐ 7427 Console Switching Unit
- ☐ 9736 Integrated Digital Network Exchange Model 20
- ☐ 9737 Integrated Digital Network Exchange Model 40
- ☐ 9738 Integrated Digital Network Exchange Model 70
- ☐ IBM 9751 CBX

Natural Microsystems

- ☐ Watson Voice System

Racal-Vadic

- ☐ 1200VP
- ☐ 1200PA
- ☐ 2400VP
- ☐ 2400PA Model 2
- ☐ 9600VD

Scitex

- ☐ Integrator 1544

Telebit Corp.

- ☐ Trailblazer Plus

Ven-Tel

- ☐ 18-K

APPLICATION SOFTWARE

- ☐ 1-2-3
- ☐ 1-2-3 Networker
- ☐ 4th Dimension
- ☐ Ability
- ☐ Access/X.25/SDLC/QLLC
- ☐ AccountMate
- ☐ AccountMate III Plus
- ☐ ACCPAC BPI Accounting
- ☐ ACCPAC Plus
- ☐ Adobe Illustrator
- ☐ Advanced Revelation
- ☐ Aenus
- ☐ AIMS
- ☐ AppleLink
- ☐ Application Development System

- ☐ ARKIVE
- ☐ Asynchronous Communications Server
- ☐ AutoCAD
- ☐ BABY/36
- ☐ BBx Progression/2
- ☐ Btrieve
- ☐ Btrieve/N
- ☐ C Language RPC Compiler
- ☐ C-ISAM
- ☐ Carbon Copy
- ☐ Case Management System
- ☐ CC-Assist
- ☐ CertiFlex
- ☐ Champion III
- ☐ ChiLan CS-1 UTS Gateway
- ☐ CLC
- ☐ Clipper
- ☐ Close-Up
- ☐ Color Magic
- ☐ Condor 3
- ☐ Content
- ☐ Cricket Draw
- ☐ Cricket Graph
- ☐ CROSS/POINT
- ☐ Crosstalk XVI
- ☐ Crosstalk XVI for Networks
- ☐ CYMA
- ☐ DataEdge
- ☐ DataFlex
- ☐ DataLex
- ☐ dBASE Graphics
- ☐ dBASE III Plus
- ☐ dBXL
- ☐ Direct Net
- ☐ DisplayWrite 4
- ☐ Distribution Manager
- ☐ DT Network
- ☐ EasyFiler
- ☐ EasyGate
- ☐ EasyWriter II
- ☐ EGA Paint
- ☐ Enable/LAN
- ☐ Enrich
- ☐ EtherComm
- ☐ EtherConnect – LAN Interface for PC S/W
- ☐ Eureka: The Solver for the Macintosh
- ☐ Eureka: The Solver IBM Version
- ☐ Excalibur Plus
- ☐ Extended Features
- ☐ FailSafe
- ☐ File & Find
- ☐ Filemaker Plus
- ☐ Focal Point
- ☐ ForComment: Network Version
- ☐ FoxBASE +
- ☐ Framework II
- ☐ FreeHand
- ☐ Freelance
- ☐ Freelance Plus
- ☐ GEM Desktop
- ☐ GEM Draw
- ☐ GEM Graph
- ☐ GP
- ☐ Great Plains
- ☐ Harmony
- ☐ Harvard Graphics
- ☐ Harvard Total Project Manager
- ☐ Higgins Group Productivity Software
- ☐ High Stepper
- ☐ HyperCard
- ☐ ICMS
- ☐ Informix-4GL
- ☐ Informix-ESQL/C
- ☐ Informix-SQL
- ☐ InfoTrax
- ☐ Insurance Writer
- ☐ IRMALAN
- ☐ Javelin
- ☐ JetTax
- ☐ KeyEntry III/LAN
- ☐ LAN Administrator's Kit
- ☐ LAN Shell
- ☐ LAN:Datacore
- ☐ LAN:DataStore
- ☐ Lanscope
- ☐ Legal Billing II +
- ☐ LinkUp 3270 Gateways

- ☐ MacDraw
- ☐ Macola
- ☐ MacProject
- ☐ MacWrite
- ☐ Magic PC
- ☐ Manufacturing Manager
- ☐ MasterDesigner II
- ☐ MathPlan
- ☐ Maxess SNA Gateway
- ☐ Maynstream
- ☐ McMax
- ☐ MDBS III
- ☐ Me2
- ☐ Metro
- ☐ MICA
- ☐ Microsoft Assembler
- ☐ Microsoft C Compiler
- ☐ Microsoft Chart – Macintosh Version
- ☐ Microsoft Chart – PC Version
- ☐ Microsoft Excel
- ☐ Microsoft Excel for the PC
- ☐ Microsoft File
- ☐ Microsoft Linker
- ☐ Microsoft Project
- ☐ Microsoft QuickBasic
- ☐ Microsoft Word for Macintosh
- ☐ Microsoft Word for the PC
- ☐ More!
- ☐ MultiMate Advantage II LAN
- ☐ Multiplan
- ☐ NETmanager – The LAN Support Center
- ☐ NETremote – Network Productivity Tool
- ☐ NetTime
- ☐ Netway 100A/AE
- ☐ Network Co-Processor
- ☐ NIN
- ☐ NINplus
- ☐ Nursing Information Network
- ☐ O'Hanlon's Data Base Solutions
- ☐ OAT OATGATE
- ☐ Office Writer
- ☐ OMNIS 3 Plus
- ☐ Open Access II Network
- ☐ Operating Room Information Network
- ☐ Orchestrade Series
- ☐ ORIN
- ☐ OSAS
- ☐ PageMaker for the Macintosh
- ☐ PageMaker for the PC
- ☐ Paradox
- ☐ PC Focus
- ☐ PC Paint Plus
- ☐ PC Watch

- ☐ PC-Anywhere
- ☐ PC/TCP Network Software
- ☐ PCOX/Gateway – 16
- ☐ Personal Editor 2 (PE2)
- ☐ Personnel Resource Network/Schedule
- ☐ PFS:Professional File
- ☐ PFS:Professional Network
- ☐ PFS:Professional Plan
- ☐ PFS:Professional Write
- ☐ PlanPerfect
- ☐ Platinum
- ☐ PLUS78—VIP Terminal Emulation
- ☐ Point of Sale for Real World
- ☐ Poly-STAR/220 & 240 for DEC LAT networks
- ☐ Poly-STAR/220 & Poly-STAR/240
- ☐ Power Manager
- ☐ PowerBase
- ☐ PowerPoint
- ☐ PROGRESS
- ☐ Project Manager
- ☐ Property Management
- ☐ PWS/IDEAS
- ☐ Q-Pro 4
- ☐ Quattro
- ☐ QuickConnect
- ☐ QuickSilver
- ☐ R&R Relational Report Writing
- ☐ R:BASE CLOUT
- ☐ R:BASE Extended Report Writer
- ☐ R:BASE for DOS
- ☐ R:BASE Program Interface (PI)
- ☐ R:BASE Runtime
- ☐ R:BASE System V
- ☐ RDM
- ☐ Ready, Set, Go!
- ☐ Real World
- ☐ Reference Point
- ☐ Reflex – the Analyst
- ☐ Reflex Plus
- ☐ Retail Inventory Control
- ☐ Reveille
- ☐ RM/COBOL
- ☐ RM/COBOL-85
- ☐ RM/Net + 5
- ☐ Sales Executive
- ☐ Samna Word Plus IV
- ☐ SBT Database Accounting Library
- ☐ Shoebox 3
- ☐ SideKick for the IBM PC
- ☐ SideKick for the Macintosh
- ☐ SmartCom II
- ☐ SNADS Gateway/3 + Mail
- ☐ Softerm PC
- ☐ SQLBase
- ☐ SuperCalc
- ☐ SuperCalc LanPak
- ☐ SuperKey

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- ☐ TEAM-UP
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- ☐ Volkswriter Deluxe Plus
- ☐ Volkswriter III LAN
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- ☐ Windows
- ☐ Windows/386
- ☐ WordPerfect
- ☐ WordPerfect – Library
- ☐ Words & Figures
- ☐ WordStar 2000
- ☐ WordStar 2000 Plus
- ☐ WordStar Professional
- ☐ Xtrieve
- ☐ Xtrieve Report Writer Option
- ☐ XyWrite III
- ☐ XyWrite III Plus
- ☐ ZIM
- ☐ ZyINDEX

PROTOCOLS

- ☐ AFP
- ☐ Async
- ☐ Bisync
- ☐ DLC
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A high-end color solution

With a price tag to match

BY ROBERT VIRKUS

Nine thousand dollars for Macintosh software? That's what Pre-Press Technologies Inc. is charging for SpectreMatch I ($3,000) and SpectrePrint I ($6,000). Joe Mintz, the Encinitas, Calif., company's president, asserts that $9,000 could be a bargain.

Developed for printing professionals, SpectreMatch does color correction and SpectrePrint produces color separations. Color photographs or transparencies are scanned in at 300 to 1,000 dots per inch and viewed on a color monitor. Photo editors or graphic artists make color corrections with SpectreMatch's controls, which are identical to those of laser drum scanners used in a professional pre-press shop. The artist can adjust range, gradation and color by manipulating the cyan, magenta, yellow and black (CMYK) colors, the process colors required for four-color printing.

Then SpectrePrint takes over and generates the four-color separation files to be printed on a laser imagesetter such as a Linotronic L300. The software converts red, green and blue screen components to CMYK with interactive controls for separation, gradation and masking. It can also create four Encapsulated PostScript (EPS) or Tag Image File Format (TIFF) files to import into a page-layout program.

Of course, the hardware for this pre-press control exceeds the average Macintosh owner's budget. At minimum, a Mac II with 4 Mbytes of memory and a 24-bit graphics card and monitor will be required. A complete hardware and software package could cost $25,000.

Mintz, however, said, "There is a threshold of quality which any Mac-based or PC-based software for color printing must reach. We've been told by the experts in the field that our software definitely meets the minimum quality standards for most printing applications. Because of our control of the black and our color correcting sophistication, we've never been told that our quality is not good enough for printing.

"We're not a desktop product but a professional product. This doesn't mean there aren't desktop publishers who are looking to do professional-quality work. The alternative to our software is a high-end pre-press system. Relative to what you would have to spend without our software, it's a very good value."

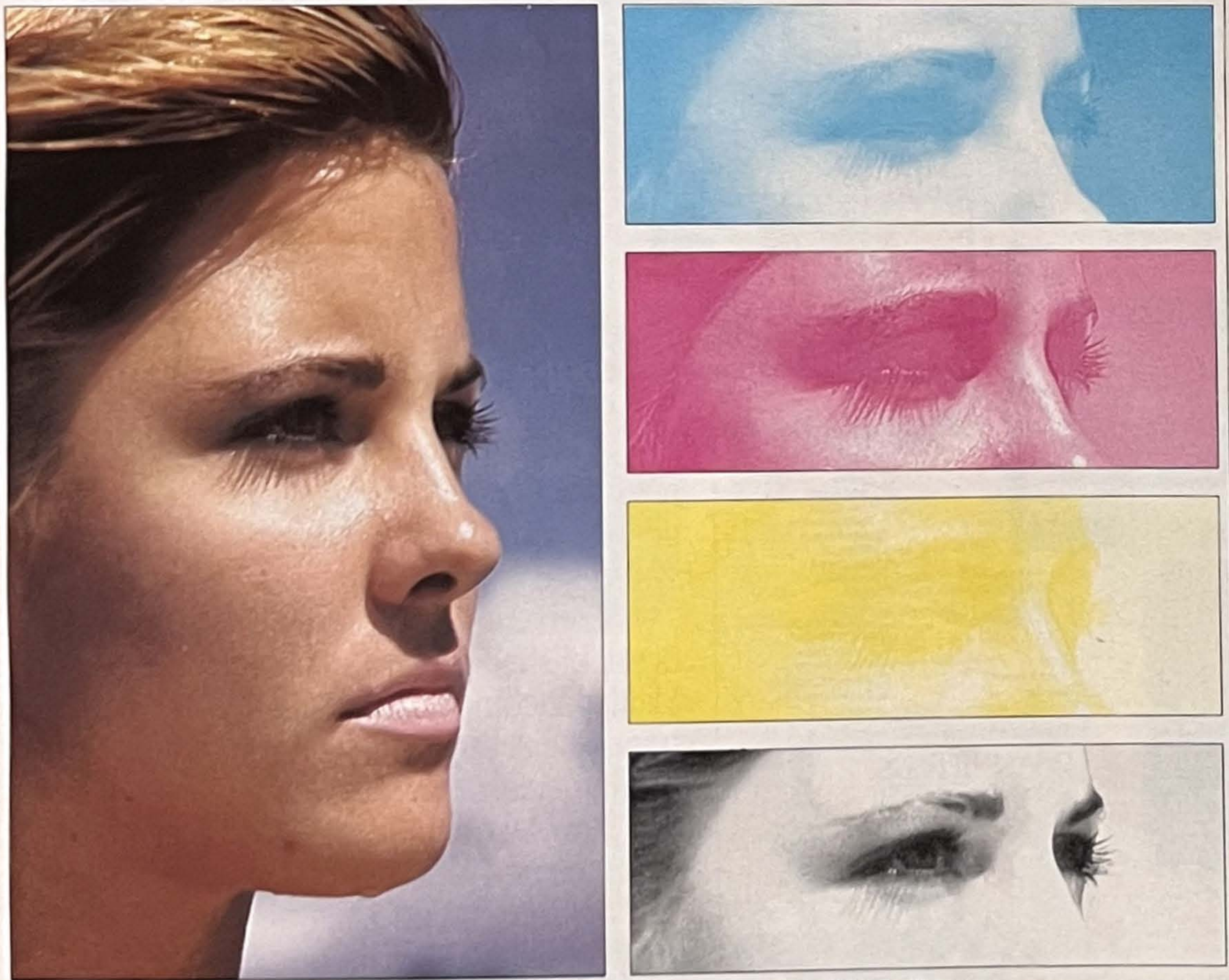
According to various printing professionals around the country, 80 percent of all color is of a higher quality than is really necessary. Until now, however, users had only high-end equipment to choose from. For electronic scanning, the choices have been limited to very high-quality pre-press systems such as Crosfield and Scitex. Although links to the Macintosh have been announced for these systems, the image ultimately ends up in a half-million dollar machine for final correction and output. Rental time on these high-end machines can run upward of $500 per hour, so the cost savings of using a Mac workstation are not as great as originally expected.

Pre-Press Technologies is targeting the 80 percent who don't really need such top-level results as well as a new market — black-and-white publishers who have stayed away from color because of the pre-press costs. "Now these people have an opportunity to cut pre-press costs so much that the price of printing in color is not negligible, but only a small increment over their black-and-white printing," said Mintz. "We've eliminated the stripping costs, so that we're seeing savings of 50 percent or more over traditional pre-press costs."

Mintz said he envisions a network of professional service bureaus, where the color knowledge resides, running his company's software. "Publishers can create their text and page geometry and even position [low-resolution] versions of the scanned images that they are going to be using," he said. "They then send that file over to the service bureau where the final high-resolution scanning is done, inserted into the file, and the final film is output with all elements in position.

"By having a network of service bureaus who know what color is, a less sophisticated

See SPECTRE, next page



SpectrePrint I from Pre-Press Technologies automatically creates four-color separations from electronic files.

BOLDFACE

Training your eyes

BY EZRA SHAPIRO

Training your eye to recognize typefaces yields benefits far beyond any reasonable expectation. Not only will you surprise yourself and impress your friends with your command of typographic trivia, you'll find that you've become sensitive to the use of type as a design element. Your own work will improve as a result. If you don't have the time or money to enroll in a course in typography (or your local community lacks a school with a design curriculum), you can do a pretty good job of teaching yourself.

Begin by getting several type books, preferably ones with complete alphabets. This is actually quite easy. You can pick up catalogs for rub-down or acetate-backed type (such as Letraset or Formatt) from any large art supply store. Or check the Yellow Pages under "typesetting" and make a few calls; many of the companies that set type either sell or give away sample books. If you haunt musty book stores, look in the graphic arts section for catalogs from type houses; an amazing number of type books seem to drift to used-book dealers. And if you're not averse to spending a little money, many art stores and independent book dealers stock Dover Books' paperback collections of alphabets.

When you've piled up a few reference works, the fun begins. Select a simple alphabet or two (Futura and Times Roman are good choices), and try to figure out what gives each of them a distinct personality.

How is the lower-case "a" drawn — is it a block letter like the one you printed as a kid or is it the ornate kind with the stunted ascender? Same thing for the "g". Does the lower-case "t" end in a curved tail or is it squared off at the bottom? Is the hump of an "h" or "n" significantly shaved where it joins the vertical? If there are serif "feet" on the letters, are they flat or curved? Are they tapered where they meet the main body of letterforms or do they butt at right angles? How thick are the downstrokes, and how do they relate to the thins? You don't have to master every nuance, but you should focus on details.

As soon as you feel comfortable with a particular typeface, start looking for it. See whether it shows up regularly in the ads in your favorite magazine, on signs, billboards or labels in your supermarket. Turn this self-testing into an amateur sport like birdwatching.

You'll have no trouble spotting unique typefaces like Machine or Aachen or most other "display" faces (type used for headlines rather than body text). Soon you'll be equally adept at identifying the telltale characteristics that differentiate more prosaic alphabets. (For example, the steeply angled tail on the lower-case "y" in Goudy is a dead giveaway.)

How will this help you as a designer? You'll certainly have fewer problems specifying type. Almost by osmosis, your studies will have given you a much better feel for how typefaces look best on a page and which ones work well together. ☐

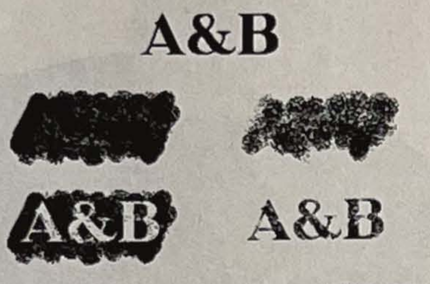
To reach us with tips, comments, disagreements or fabulous Mac art, please send MCI Mail to GRAPHICARTS or write to Graphic Arts c/o MacWEEK, 525 Brannan St., San Francisco, Calif. 94107.

Tips & Techniques

Creating logo effects

BY EZRA SHAPIRO

Although Mindscape's GraphicWorks 1.1 is primarily a black-and-white bit-map editor, you can use it to produce some interesting logo effects. The trick is to emphasize the grainy look of the dots by spraying the airbrush tool to create overlays for your type. You can fine-tune both the diameter and speed of the airbrush, and GraphicWorks' selection of nine mask styles gives you a wide range of tricks to play around with. Here's how it works:



Start by setting your type; I've used 48-point Basel here, but any large font will do. On the left is a crayon overlay effect. At right, a lighter airbrush and the NotBic option produce an antique, decaying letterform.

Create an "easel" (a panel in which you can employ the paint toolbox) and use a large, bold font for your logo. Superimpose a slightly larger or smaller easel over the first, select the Transparent Paper option from the Features menu, and lightly airbrush over the type. Since the two easels are independent, you're not mutilating the type underneath, and you can always redo the airbrushing. Double click on the text tool to bring up the Ink palette, and choose the way you'd like to have the pixels in the two planes interact with each other.

Alhough you can edit and print at laser resolution with GraphicWorks, you won't be able to use your logo in other applications in the program's file format. Save the document as a MacPaint file, which combines the two layers into one, and you're ready to paste it into any desktop publishing program. (Be sure to save another copy of the document as a GraphicWorks file, so you can go back and rework it later.) You might want to experiment with working large and reducing the final image; that way you'll get smaller dots.

This is only a taste of the program's masking capabilities. GraphicWorks allows multiple layers, and you can change the mask with each new layer you add.

Graphic Works is priced at $149.95. Mindscape is at 3444 Dundee Road, Northbrook, Ill. 60062; (312) 480-7667 or (800) 221-9884. □

SPECTRE

Continued from previous page

front-end user, be it a graphic artist, editor, publisher or corporate art department, still can have creative input and control. The service bureau, with the knowledge of what color separators are all about, makes sure it looks good."

According to Mintz, the reason for working with the low-resolution version is to help keep the cost of the workstations low. "There's no reason to play with big files," he said. "You don't have to worry about gigabytes worth of images lying around. We would rather spread the wealth and see lots of Macs out there with page-geometry packages all feeding service bureaus, where they have the ability to do the [high-resolution] scanning and color correction and know what they're looking at. We want the skill to be at the service bureau.

"I don't care if this stuff costs 50 bucks — it's still an art. We can't assume that just because the costs have come down the skill level goes away. That's where people make a big mistake. We want it to stay an art and we want to train people on what color separation is all about, then make it easy for people on the front end to tie into this new network."

Pre-Press Technologies also is announcing a new software product, SpectreMatch/Print, tentatively priced at $7,500, which combines the color correction of SpectreMatch with automatic separation. It enables graphic artists to do color correction themselves, but they don't have to become involved with the complexities of color separations. The color separation techniques are there.

"What we found with SpectreMatch in our early testing was that unless you're a color separator, it was easy to use but you didn't know what it was asking you," Mintz said. "So we've taken away all those problems and made it fairly automatic. But the trade still wants our SpectrePrint package. They do want control. They do want to deal with the percentages of cyan, magenta, yellow and black. SpectreMatch/Print will take care of the new market for color and SpectrePrint will take care of the traditional market."

Mintz also noted that the software works with all scanners. Pre-Press Technologies also is working with some scanner manufacturers to put SpectreMatch into the scanner's operating system. "So when people buy a scanner they can buy it with color-correction software, making it emulate a high-end scanner," he said.

Mintz said he sees the network as a joint venture between the user and the service bureau. "We're having a lot of fun," he said. "We don't know how much trouble we're causing out there, but we hear that we're causing a little bit of concern among the big systems by taking color correction and putting it into the workstation. We would rather be the friend of their users than worry about the other high-end manufacturers because we believe that it's a service business."

Pre-Press Technologies is located at 543 Encinitas Blvd., Suite 114, Encinitas, Calif. 92024; (619) 753-0194. □

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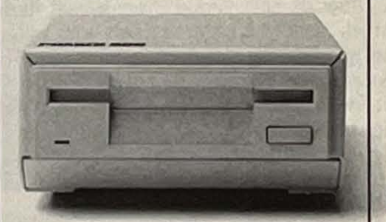

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E-mail breaks the LANlock

No longer a small niche market, electronic-mail applications have reshaped office communications

SCOTT CAMPBELL

BY MICHAEL MILEY

In the three short years since electronic mail was introduced on Macintosh local-area networks, it has traveled from being a niche application to occupying a central place among networked Macs. Those who start to use it wonder immediately how they ever survived without it, while those who have been using it for some time can be heard clamoring for more features, more range, more smarts.

It's not hard to figure out why. If you think of Macs as the nerve ends of the AppleTalk system, it's E-mail that provides the intelligent spark between them. It's the talk in AppleTalk, as the Internet people first put it, and without it — even with AppleShare — a network is only a way to share files and peripherals. With it, however, users can eliminate phone tag, reduce paperwork and ease the burden on printers, as well as dispense with the relay race of those little pink missives.

Even so, the E-mail scene is changing rapidly. As users demand one-stop communications, E-mail on the LAN is confronting the world of wide-area networks, the province of traditional communications packages.

The main players in Macintosh E-mail, Symantec, Microsoft, CE Software and 3Com, are beginning to address these issues.

InBox, the first truly useful E-mail product for the AppleTalk LAN, was introduced in May 1986 by Think Technologies Inc. of Bedford, Mass. The product broke new ground in the development of store-and-forward E-mail architecture on the Macintosh and set some new standards in human interface design. Since that time, Think has merged with Symantec Corp. of Cupertino, Calif., and InBox has gone through several upgrades, although the basic outlines of the program have remained the same.

InBox 2.2, the current version, retains the server-client strategy of its original design. You begin with a start-up kit of server and administrative software, along with three Personal user connections. These function as desk accessories and allow you to send and receive mail from within any application. Additional Personal connections must be purchased for every new user on the network. A Mac is designated as the server (512-Kbyte minimum), and the server software may either dedicate that Mac to running E-mail or run it in the background, allowing some other more limited usages on smaller networks.

The administrative software that comes with InBox is fairly comprehensive, giving you such server information as disk space availability, timed-compression routines for reclaiming disk space from deleted messages, tuning features for remote dial-up, and a backup-and-restore utility. InBox is compatible with MultiFinder and with such file servers as AppleShare and TOPS, as well as disk servers such as MacServe.

InBox offers a host of features, including password protection, a message and phone pad, and a public bulletin board. It also has capabilities for creating groups and forwarding messages, obtaining return receipts and RSVPs, and for sending text or graphics files along with a message. Messages may be saved to disk or printed. They may also be sent from a user to other message centers, either on the same or linked networks, although Version 2.2 lacks server-to-server capability.

One of InBox's key features is Mac-to-PC compatibility: PCs hooked up to an AppleTalk network via controller cards allow transparent E-mail traffic with Macs. Another key feature is the ability to dial-up remotely via a modem to get your messages, although a heavily used network may have tuning problems, and time-outs can occur even at 4,800 bps.

After an initial period of adjustment, during which AppleTalk LAN standards were still being formed and hardware products introduced, users have reported general satisfaction with InBox 2.2. James Marcelle, information services evaluator in the Orthopaedics department at the University of Washington, set up InBox on about 60 Macs and three IBM PCs over two networks.

"InBox has changed the way everybody works," said Marcelle. "It has almost completely replaced typical departmental correspondence and cut down dramatically on secretaries' garbage work. Now, when the department chairman writes a chapter in his book, he does it in InBox. He'll work from his home and send it over modem to the office."

Remote linkage is an important facility at the university. "I've got 45 users on my primary network and 15 on the second largest, at the hospital six miles away," said Marcelle. "Using the interoffice send and Hayes' 9600 V-Series modems, we can pass E-mail back and forth. We can also translate Lotus 1-2-3 and Excel files back and forth between the PCs and the Macs."

Intermail was introduced in January 1987 by Internet of Lincoln, Mass. In September 1987, the product was acquired by Microsoft Corp. of Redmond, Wash., and renamed Microsoft Mail. Its current version, 1.36, is a slight upgrade with some bug fixes, but basic features are the same as the original Intermail.

Microsoft Mail's strengths include ease of setup and good remote access as well as a short learning curve. On a day-to-day basis, Microsoft Mail compares favorably with InBox, and some users report that it's easier to use. Unlike InBox, Microsoft Mail has on-line help. At the same time, Microsoft Mail is not quite as fully featured as InBox, although many of the features listed above for InBox also apply to Microsoft Mail, including compatibility with AppleShare, TOPS and MacServe, as well as multiple message-center capability. One of its weaknesses, however, is a certain fragility of its data file on heavily used networks. A corrupted data file means the administrator has to set up the list of users from scratch. Microsoft has yet to release the administrative software to remedy this, although a beta version of a utility for repairing the data file and recovering disk space from deleted messages does exist.

Microsoft Mail's server-to-client relationship is much the same as InBox's, although Microsoft Mail's individual user connections are not serialized like InBox and can be copied from one master, making it easier to set up. Indeed, Microsoft Mail's interface is less iconic than InBox's, an open quality shared by its structure. Thus,the mail of users who don't choose to have passwords can be read by anyone. Even so, Microsoft Mail lacks a bulletin board, the ability to automatically route a message to a predesignated group (for example, all individuals in the accounting department) and the ability to edit forwarded messages. Like InBox 2.2, Microsoft Mail is unable to send more than one file along with a message and lacks direct links to wide-area networks, although according to company officials, its architecture will lend itself well to developing gateways in the future. Currently, there is no version for the IBM PC.

One reason for choosing Microsoft Mail over InBox is the price. "We have got almost 150 Macs networked in clusters," said Jim Felbab, a manager of operations in the information services department at Wisconsin Bell in Milwaukee, Wis. "We chose Microsoft Mail over InBox because we thought it gave more value and performance for the dollar."

While Felbab said he considers Microsoft Mail to be a good product, he's run into some data-file size problems on the larger networks, something that has irritated other users. Data files have been known to grow to 10 Mbytes and more. The new data compression utility should solve that problem, but Felbab expressed frustration at what he regards as foot-dragging on the part of Microsoft: "It doesn't appear that Microsoft is spending much time on Microsoft Mail. I've been waiting for upgrades. It's time for them to speak up or hold their peace. Microsoft Mail appears to be taking a back seat." Microsoft officials, on the other hand, report working very hard on Microsoft Mail. Their first task, according to Hank Vigil, head of Workgroup Applications, has been to integrate it with other Microsoft products.

QuickMail was released this summer from CE Software Inc. of West Des Moines, Iowa, and represents second-generation E-mail for the Mac. QuickMail adds a number of features projected for but not currently present in InBox and Microsoft Mail, including a telecommunications software bridge to public services like CompuServe, MCI and GEnie. Messages may be batched for routing to these services at predesignated times, a feature that it shares with the higher-end 3Com 3+Mail product. Batching applies to printing and deleting messages as well. Additionally, QuickMail allows you to customize forms for memos, phone messages, orders and such. It lets you append multiple files or programs to a message, and, like 3+Mail, it gives you management structures for organizing your incoming messages. Like Microsoft Mail, QuickMail has on-line help, adding context-sensitivity: Using the Command-? combination and pointing to a function or menu item on-screen brings up a window explaining that function. QuickMail is also compatible with AppleShare, TOPS and MacServe.

QuickMail has other handy capabilities including message dating. The active conferencing feature in which users can talk to one another over the network and get a transcript of the entire conference is unique. There is also a privacy feature that allows you to set the number of minutes you want to be undisturbed. A message can be sent during that time to users trying to contact you.

Compared with the elegant style of InBox and the bare-bones style of Microsoft Mail, QuickMail's interface and iconography is a bit quick and dirty. This along with its many features means QuickMail's learning curve may be a bit steeper than its predecessors, but that shouldn't intimidate users who are looking for a full-featured E-mail package.

Continued on Page 40

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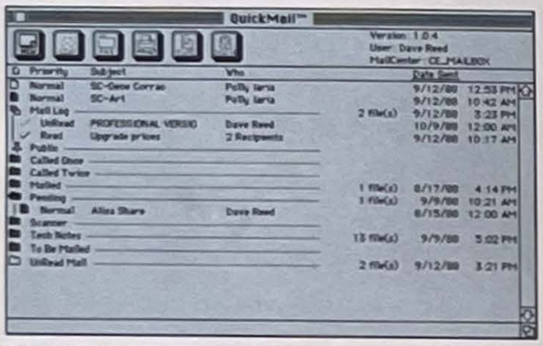
Continued from Page 38

"I've tested both Microsoft Mail and InBox — I had the products in-house — and one of the reasons I went with QuickMail is its extensibility," said Dewayne Adams, president of Matrix Technologies Inc. of Nashville, Tenn. "The bridges to CompuServe and MCI are really useful, and we've written our own scripts in MPW to hook up customers to their IBM mainframes."

Adams said he finds the conferencing feature critical since his phone system will only permit a three-way conversation. He's had seven people conferencing at once in QuickMail. "But CE needs to take a hard look at the way they're transferring appended files," said Adams. "It's slow. But for standard mail, it's quick enough."



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                                          User: Dave Reed
                                          MailCenter: CE_MAILBOX
Priority     Subject               Who                       Date Sent
Normal       SC-Gene Corrao        Polly Iarta               9/12/88  12:53 PM
Normal       SC-Art                Polly Iarta               9/12/88  10:42 AM
Mail Log                                      2 file(s)     9/12/88   3:23 PM
  UnRead     PROFESSIONAL VERSIO   Dave Reed                10/9/88  12:00 AM
  Read       Upgrade prices        2 Recipients              9/12/88  10:17 AM
Public
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Mailed                                        1 file(s)     8/17/88   4:14 PM
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  Normal     Alias Share           Dave Reed                8/15/88  12:00 AM
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UnRead Mail                                   2 file(s)     9/12/88   3:21 PM
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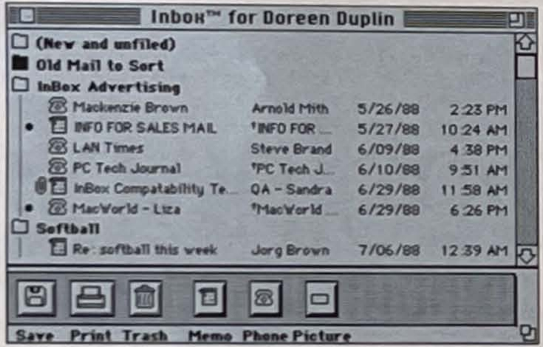


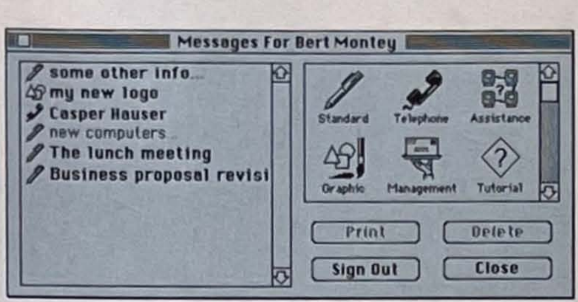
```
☐ (New and unfiled)
■ Old Mail to Sort
☐ InBox Advertising
     Mackenzie Brown             Arnold Mith     5/26/88   2:23 PM
  •  INFO FOR SALES MAIL         *INFO FOR ...   5/27/88  10:24 AM
     LAN Times                   Steve Brand     6/09/88   4:38 PM
     PC Tech Journal             *PC Tech J...   6/10/88   9:51 AM
     InBox Compatability Te...   QA - Sandra     6/29/88  11:58 AM
  •  MacWorld - Liza             *MacWorld ...   6/29/88   6:26 PM
☐ Softball
     Re: softball this week      Jorg Brown      7/06/88  12:39 AM
```

(Above) QuickMail's hierarchical mailbox allows for custom organization of folders, viewable by priority, subject, who it was sent by and date sent. Unread messages are white documents, folders or dotted checkmarks. The public folder is a bulletin board. (Right) InBox 3.0 will have hierarchical storage for organizing mail. Named folders can display messages according to categories. (An enclosed file is indicated by a paper clip.)

Users who are interested in higher-end Mac-to-PC integrated solutions linking Macs on LocalTalk to Ethernet and Token-Ring networks may want to consider the 3+ family of network products, which includes 3+Mail from 3Com of Santa Clara, Calif.

3+Mail, introduced early this year, permits E-mail internetwork routing between IBM PCs, PS/2s and Macintoshes across dissimilar network topologies. Since 3+Mail works only with the 3+Server hardware, users should consider 3+Mail only if they want a hardware-based file-serving alternative to AppleShare- or TOPS-based solutions.

As is typical for Mac E-mail, 3+Mail's store-and-forward architecture keeps messages on the recipient's server until the recipient is ready to retrieve them. Users are notified of their mail at predesignated intervals via its Mail Minder DA. To send mail, however, users are required to launch the 3+Mail application or run it under MultiFinder. (It uses up 192 Kbytes of RAM.) 3+Mail offers the message functionality expected of an E-mail package and includes message management that combines searching (by sender, subject, notation or text string) with sorting (by date, subject, notation, sender or message number). Combined with multiple mailbox and folder strategies, messages may be saved in an organized way for future reference.



some other info...
my new logo
Casper Hauser
new computers...
The lunch meeting
Business proposal revisi

The user of Microsoft Mail sees unread messages on the left in bold, with icons indicating the type of message: memo, graphic or phone. On the right, icons include user management preferences, a tutorial and the User Assistance request that can be sent to the Network Manger.

3+Mail uses the 3+Name service to accommodate full names and aliases, from which distribution lists may be created. Batch processing covers sending, printing or deleting messages. With 3Com's 3+Route service and an IBM PC server, users can send their E-mail over wide-area networks to other 3Server LANs via modems and phone lines. Via the Soft-Switch SNADS gateway and a dedicated PC, the product permits access to E-mail systems such as MCI, IBM's DISOSS and PROFS, Wang's VMSmail and OFFICE, and DEC's All-in-one.

"We decided to go with the 3Com solution because we needed to move a lot of CAD files quickly over Ethernet," said Mitchell Northcutt, information technology specialist at Ohmeda Inc. of Madison, Wis. Ohmeda is a manufacturer of health-care equipment, and its manuals use sophisticated CAD drawings produced in AutoCAD on the IBM PC. When Ohmeda started looking for a publishing system, it bought Macs and needed to integrate them with its PCs. "Moving things from workstation to workstation functions transparently," Northcutt said. "We save drawings in IGES format, and using CADMover, we convert them to EPS format for page layout."

There are some drawbacks, however, according to Jim Huddleston, staff specialist in the communications sector at Motorola Inc. of Schaumburg, Ill. "While I'm generally satisfied, you can't see an automatic list of names from the Macintosh side, and you need to exit your program to load the mail application." But Huddleston said he is pleased with the way it has changed work group habits, adding, "I can transfer Lotus 1-2-3 files back and forth with Excel without having to use a special device such as the DaynaFile." ☐

Michael Miley is a features editor at MacUser and formerly special reports editor at Macintosh Today.

PRODUCT INFO

3Com Corp.
3+Mail for the Macintosh 1.3: **$595** for one to five users
3165 Kifer Road
Santa Clara, Calif. 95052
(408) 562-6400; (800) NET-3COM

CE Software Inc.
QuickMail 1.0: **$300** for 1-10 users
P.O. Box 65580
West Des Moines, Iowa 50265
(515) 224-1995; (800) 523-7638

Dayna Communications Inc.
DaynaMAIL 1.0: **$295** for five-user package
50 S. Main St.
Salt Lake City, Utah 84144
(801) 531-0600

Generation Four (G4)
CommCenter 1.0: **$249** per network installation; **$75** for each additional 4D Runtime
3232 San Mateo, N.E. #199
Albuquerque, N.M. 87110
(505) 294-3210

MegaGraphics Inc.
MegaTalk Plus 1.0: estimated prices (product not released): **$249** for two to six users, **$349** for 7-12, **$449** for 13-20, **$549** for 21+
439 Calle San Pablo
Camarillo, Calif. 93010
(805) 484-3799

Microsoft Corp.
Microsoft Mail 1.36: **$299.95** for one to four users, **$499.95** for 5-10, **$749.95** for 11-20, **$949.95** for 21-32
16011 N.E. 36th Way
Redmond, Wash. 98703-9717
(206) 882-8080; (800) 426-9400

Symantec Corp.
InBox 2.2: **$350** for start-up kit; **$125** for Personal connections
135 South Road
Bedford, Mass. 01730
(617) 275-4800; (800) 888-0886

TENpoint0
Focal Point II: **$199.95** (upgrade: **$39.95** until Jan. 31, 1989, then **$89.95**)
3885 Bohannon Drive
Menlo Park, Calif. 94025
(415) 329-0800

Videx Inc.
Mail Center: **$299** for two users, **$499** for six users
1105 N.E. Circle Blvd.
Corvallis, Ore. 97330
(503) 758-0521

Into the mailstrom of world communications

With the introductions of 3+Mail and QuickMail, new standards for electronic mail have emerged and new directions have been set. It's no coincidence that InBox 3.0 — under development — is showing similar file-management strategies. Expect other features to follow suit.

In the meantime, competition grows fiercer every day. Although Microsoft is reluctant to talk about developments, "standardization and transparent interconnection is the goal," said Hank Vigil, head of Microsoft's Workgroup Applications, which oversees development of Microsoft Mail. "People don't want to have several communications packages do what one integrated package could do."

As to what interconnection will mean: Microsoft Word 4.0 will include hooks into Microsoft Mail, allowing users to automatically send a message from within Word without having to call up Microsoft Mail. Even so, because InBox features like group support, IBM PC compatibility and auto-compression of data, Microsoft will need to add multiple file enclosures, true server-to-server communications, a log system and gateways to wide-area networks to keep Microsoft Mail competitive.

The word on Version 3.0 of InBox, due early next year, is that the product is going through a revision from the ground up. "InBox was originally designed for smaller networks, which was the state of the world at that time," said Ben Littauer, product development manager at Symantec. "For example, [Version] 2.2 is not a complete store-and-forward model from server to server. InBox 3.0 will address that." Microsoft and CE Software will have to address this need as well.

Feature for feature, QuickMail has the edge over the other three products. Of course, part of that advantage is connectivity to the outside world, something it shares with CE and 3Com. "Third-party developers who are working on bridges and gateways through other mail products say ours is faster and easier to write for," said CE President Richard Skeie. "That should help us keep the cutting edge in E-mail connectivity."

To date, individual bridges to services are the route CE is taking, but X.400 compatibility is looming on the horizon. The Consultative Committee for International Telegraphy and Telephony (CCITT) protocols govern a message's "envelope," content architecture and the way a user logs onto a remote server. "A logical extension to QuickMail extensible design would be to develop X.400 capability," Skeie said. "We're investigating what resources would need to be brought to bear upon developing such a gateway."

Achieving X.400 compliance is no small matter. "Future revisions of our mail system will be structured in such a way that we're compatible with X.400, without losing the specific user interface of our products," said Sydney Fisher, software product manager for communications at 3Com. 3Com's 3+Mail currently has the most third-party bridges available to other E-mail systems. Through its 3+Toolkit, 3+Mail also provides users with the means to develop their own connections.

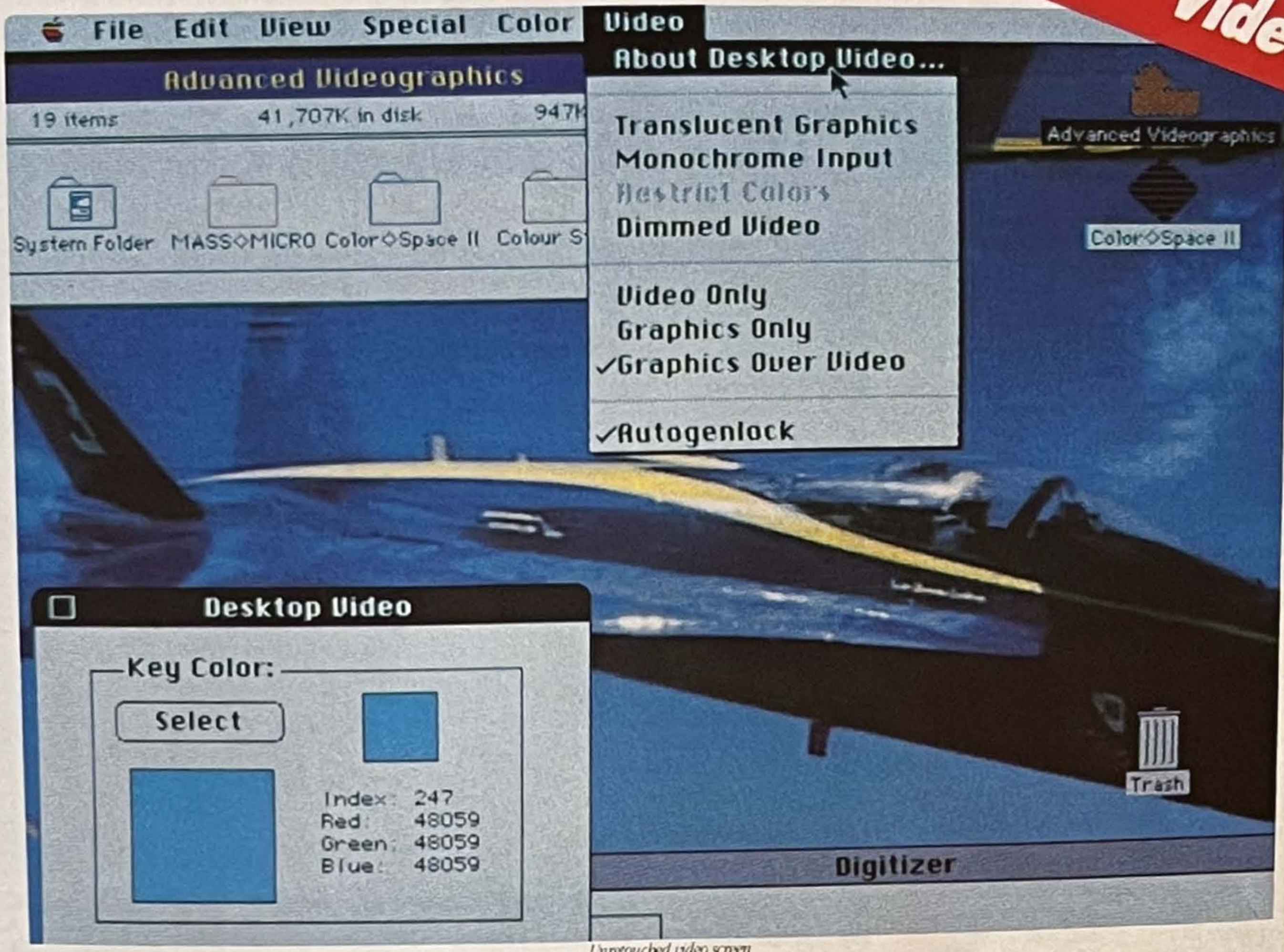
Still, the 3Com product is part of an integrated solution and, as such, is a commitment to an overall direction. Fortunately for the Macintosh LAN, however, that direction includes AppleTalk compatibility with 3Com's recently announced 3+Open LAN Manager, a networking solution that will allow users of Mac, DOS and OS/2 workstations to share files and data transparently.

As for X.400 compliance over wide-area networks, 3Com has an advantage over a purely Mac-based company. Since 3Com develops its products concurrently in the IBM environment, its off-the-shelf X.400 packages already exist on the PC side.

"We are working closely with both Apple and Digital [Equipment Corp.] to ensure that our InBox strategy remains consistent with DEC's connectivity plans and the standards it has set forth," said Gordon Eubanks, Symantec president and CEO. "This includes support of X.400." Assurances from Microsoft strike a similar refrain. "[Microsoft] Mail was constructed with X.400 in mind," said Microsoft's Vigil, "but X.400 won't be part of Version 2.0."

Suffice it to say, as local E-mail on the Mac enters the bitstream of the larger world, intense development of the medium will be part of the message for some time to come.
— By Michael Miley

Includes VideoWorks II™



Desktop Video

Key Color:

Select

Index: 247
Red: 48059
Green: 48059
Blue: 48059

Unretouched video screen

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Color•Space II comes ***bundled with VideoWorks II*** and is compatible with all Macintosh software. Color•Space II is a single card, which can be used in place of the Apple Macintosh II video board and features fully Macintosh II compatible video graphics.

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You can input with almost any VCR, video disc, camcorder or video camera and output to any standard home or business VCR, large screen projector or other video recording and display devices.

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Desktop publishing live and in color

Four-color separations come to the Mac, but at a price

BY JOHN EDWARDS

The English writer John Ruskin once wrote, "The purest and most thoughtful minds are those which love color the most."

Ruskin, a 19th-century critic, couldn't have foreseen computers, much less desktop publishing. Still, he would envy modern-day business professionals who can create color newsletters, brochures and assorted other publications on their personal computers.

Until recently, the Macintosh user who wanted to produce color documents was hopelessly mired in a monochromatic world. The availability of color displays and output devices, however, has changed that situation.

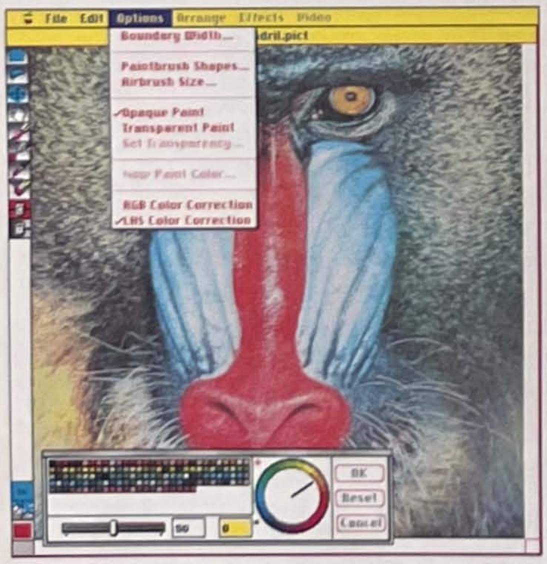
Several leading page-layout and graphics packages now support color document preparation. But color also presents new complexities to users unfamiliar with color pre-press technology.

"Even for the most experienced monochrome desktop publisher, the plunge into color is likely to be bewildering and painful," said James Woodly, a graphic design consultant in Moorestown, N.J. "It's not just moving a step beyond the current technology, it's an entirely new and very complicated technology."

Macintosh users about to embark on color desktop publishing are confronted with two possibilities for color output: spot color overlays and four-color process separations.

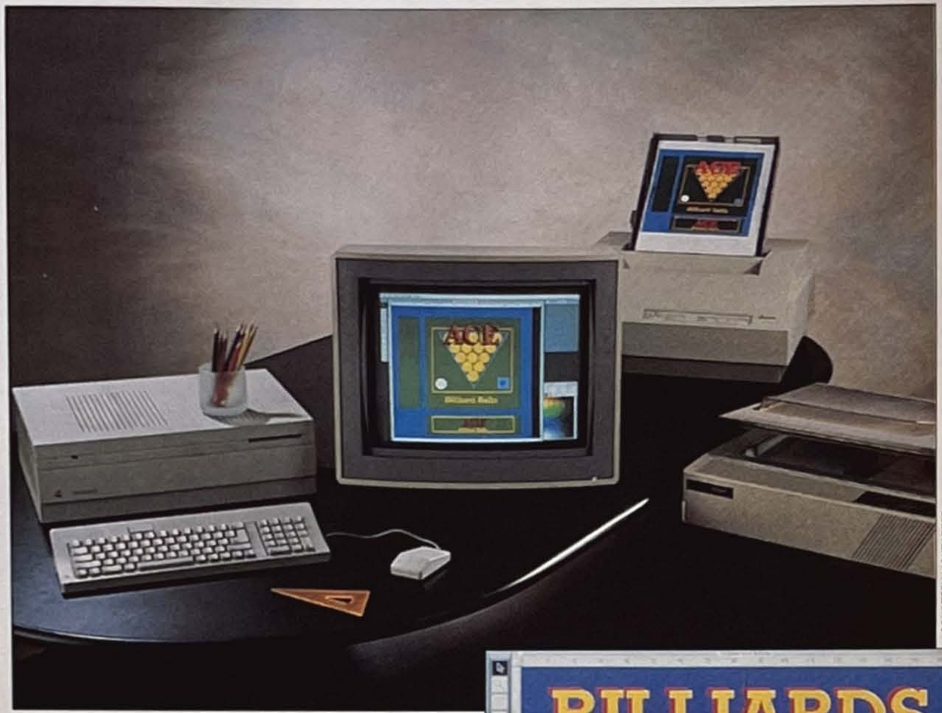
Spot color, the ability to add a color image to a specific area of the page or to produce a section of text in a contrasting color, is the more limited of the two approaches. The technique is best suited for page elements and artwork where no four-color halftone is necessary, such as bars, boxes, illustrations or charts.

A program that supports spot color, such as PageMaker 3.0 from Aldus Corp. of Seattle generates a separate document or overlay for each color used.



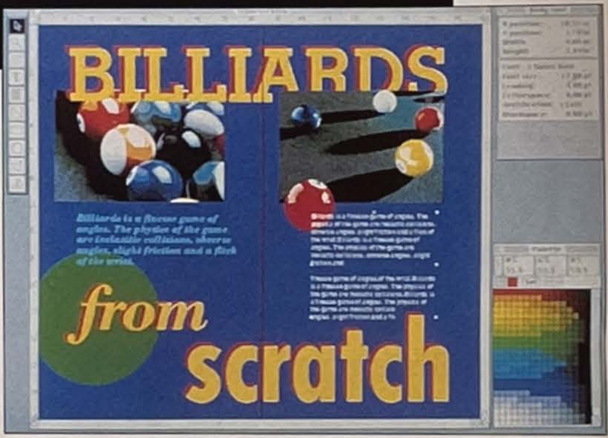
(Above) PhotoMac from Avalon Development Group features a "hue" wheel that can be used to change colors and a slider to increase the vividness of colors. (Right) In Quark XPress, process colors can be specified by simply requesting them in the color specifications box.

To color a block of text or a graphic in PageMaker 3.0, the user selects the element and the color name from a palette. Text color also can be defined in a style sheet. The user must make sure that each overlay's registration marks match properly, although registration marks, as well as the name of the color, can be automatically placed on the overlay.



COURTESY LIGHTSPEED

The Lightspeed Color Layout System is based on a Mac II with 5-Mbytes RAM and a 40-Mbyte hard disk. There are many options, including pre-press interface via 1.5-inch tape to Crosfield, Hell and Scitex systems.



Colors can be specified by using the Pantone Matching System, process color or RGB values with the Lightspeed Color Layout System.

"We've been using spot color with PageMaker for several months and had some terrific results — with newsletters in particular," said Claire Maartens, a print shop operator in Queens, N.Y. "Spot color is best when you're working with simple documents using only two or three colors. Anything more than that, and you really should look to process separations."

Four-color process separation is the technique used in the production of most high-end color publications, including MacWEEK. The technique separates an image into four film negatives, regardless of how many colors will appear in the final document.

In this technique, a negative is produced for each of the process colors — cyan, yellow, magenta or black, known collectively as CYMK — these are used to create the offset plates that do the actual printing.

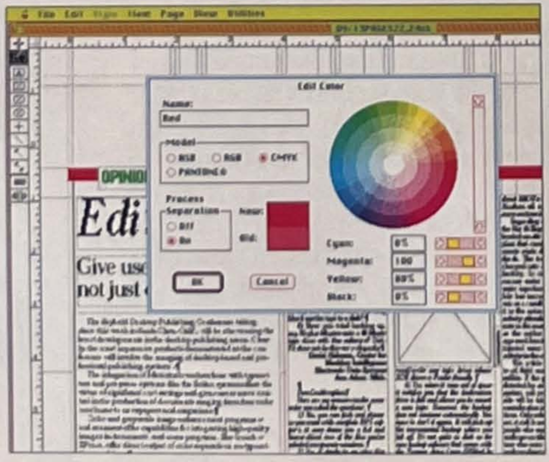
Of the page-layout programs that work with color, the recently released Quark XPress 2.0 is the only package that currently supports four-color process separations.

With XPress you can prepare spot-color separations for text, lines, frames and boxes. Four-color separations for artwork can be imported from Encapsulated PostScript Files (EPSF) created with graphics programs such as Illustrator 88, published by Adobe Systems Inc. of Mountain View, Calif. Illustrator 88 supports Pantone colors, a predefined palette of hues with corresponding index numbers, either as spot or processed colors.

Several other Mac graphics programs offer four-color process separation capabilities. These include Aldus FreeHand from Aldus Corp. and LaserPaint Color II from LaserWare Inc. of San Rafael, Calif.

Layouts complete with color EPSF art can be output on a variety of supported color printers and Linotronic units. In a Mac pre-press setup, separations are typically generated by a Linotronic unit manufactured by the Linotype Co. of Hauppauge, N.Y. These expensive and complicated machines can accept output files directly from programs that support the PostScript page-description language.

"The advantages of four-color printing are immense, but people should also know that it is an inherently risky business," said print shop operator Maartens. Trapping and overprinting are two of the more common pitfalls, according to Maartens.



Name: Red
Model: ○ HSB ○ RGB ● CMYK ○ PANTONE®
Process Separation: ○ Off ● On
New:
Old:
Cyan: 0%
Magenta: 100
Yellow: 80%
Black: 0%
OK
Cancel

A badly trapped document is one that is marred by strips of white appearing between adjacent colors. Overprinted documents feature colors that bleed into each other. These problems can be averted with patience and careful preparation, according to Maartens, but both are indicative of the hurdles facing novice color desktop publishers.

At the high end of the page-layout field is the Color Layout System (CLS) from Lightspeed Inc. of Cambridge, Mass. The Lightspeed software imports full-color images from slides or a flat-bed scanner. With CLS, users can manipulate, scale and crop images as well as add headlines and text.

CLS does not produce user-ready four-color separations. Instead, the software exports files to electronic pre-press houses such as Scitex America, Hell Graphics and Crosfield Electronics Ltd., which owns Lightspeed.

CLS is available in several versions, including a $39,000 turnkey system that includes the CLS software, a Mac II, a 19-inch color monitor, a flat-bed scanner, a color thermal-transfer printer and 20 fonts.

Another obstacle facing color desktop publishing users is the lack of a suitable color image-processing and separation software package. Avalon Development Corp. of Cambridge, Mass., is preparing to release PhotoMac, a program that will enable users to manipulate and edit full-color graphics. PhotoMac works with both eight-bit and 24-bit color images, but displays only the eight-bit version, which can be retouched and separated for either eight- or 24-bit output.

In a Macintosh-based color desktop publishing environment, most of the pre-press work, including color selection, correction, matching, editing and fine tuning, can be accomplished with the desktop computer. As in monochrome desktop publishing, the

See DESKTOP PUBLISHING, Page 44

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The over-hyped HyperCard is not a software panacea

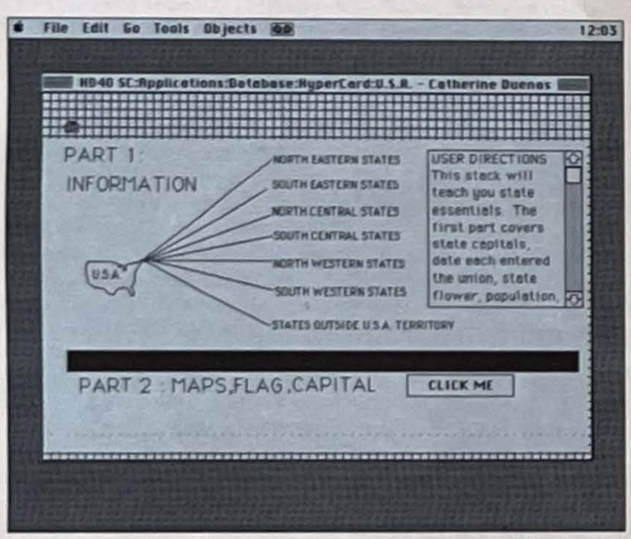
DON CRABB

In my last column I discussed a possible use for HyperCard: teaching corporate computer users how to be good internal computing customers.

HyperCard and its scripting language, HyperTalk, are well-suited for teaching novices something about the process of program development, design, coding, testing and maintenance. Despite this and other solid uses for HyperCard, don't think it's some kind of corporate panacea for software development.

The fact is that we are seeing a lot of public domain, shareware and even commercial stacks that would have better error-handling capabilities and would be more functional, faster and smaller if they had been developed as traditional Macintosh applications. While HyperCard is a wonderful product in some regards, it does not live up to all its expectations. In short, HyperCard has been overhyped.

Don't get me wrong. I love HyperCard. My colleague Bill Sterner and I converted our introductory programming class for liberal arts students from MacPascal to HyperCard. HyperCard proved to be a tremendous improvement. Students were able to grasp some programming fundamentals a lot sooner than before. The class went smoother, and student stacks took on dimensions that their MacPascal programs never had. For us, HyperCard has been a success.



USER DIRECTIONS
This stack will teach you state essentials. The first part covers state capitals, date each entered the union, state flower, population.

This simple application was a final project in a quarter-long introductory programming course at the University of Chicago.

But ... In addition to weekly homework assignments, in which students must write stacks to solve the problems, we also assigned final projects that would be of their own design. That is, after all, supposed to be the big selling point of HyperCard — empowering non-techies with sophisticated Macintosh programming skills, with minimal training.

But when students were left to their own creative devices, HyperCard did not empower much of anything.

Although applications tended to look decent, even sharp, their accomplishments were often trivial. A good example is the stack you see in the figure. This stack purports to teach third graders about the states, their capitals, state flowers, mottoes and so on. But the scripting this stack relies on is just a simple jump to another card.

The fact is that more than two-thirds of the classes' final projects (on which they toiled for more than five weeks) consisted of lots of pretty cards (borrowing art from hundreds of public domain stacks), some jazzy special effects (wipes, dissolves) but very little substance.

The majority of the class understood the basics of HyperTalk and its objects well enough to solve the assigned problems. And they understood most of HyperTalk's processing structures (for example, loops, conditionals and functions). Yet, they didn't make the connection on their own between HyperTalk's syntax and the problems they wanted to solve. Keep in mind that I'm talking about students at the University of Chicago, a group noted for its mental facility.

That's why I get a little annoyed when I read Apple PR stuff like: "HyperTalk is the first programming language simple enough for the average computer user, but powerful enough to be a serious development system for programming professionals."

So much hype has been lavished on HyperCard's "cut-and-paste functionality" that a lot of us have forgotten what it means to learn programming. HyperCard and HyperTalk don't replace that learning curve, although they do flatten it out, sometimes by quite a bit.

The upshot of all of this is the importance of maintaining a balanced view of HyperCard before deciding to join the Macintosh programming revolution. This one, like all other revolutions, requires some pain.

Whoops. In my column on database interfaces (Aug. 30), I briefly discussed Apple's acquisition and use of CL/1 software. In my efforts to shorten my column, I changed my original paragraph on CL/1 so that it no longer rang true. Here is the corrected paragraph. I am sorry for the error:

While HyperCard and Double Helix II are important steps in the development of a purely object-oriented database interface, Apple's purchase of the CL/1 software points the way to the future of Mac database interfaces.

CL/1 provides a mechanism for the translation of application commands or requests on the Macintosh into the Structured Query Language (SQL) that many mainframe databases speak. Although it is still under long-term development, CL/1 should aid in writing an application that adopts an object orientation for its user interface, since you won't have to worry about creating SQL commands directly. The application could then create virtually any ad hoc view of existing data using an object-browsing metaphor. CL/1 would translate these browsing actions into the SQL commands needed by the attached database files. ☐

Don Crabb is the director of laboratories and a senior lecturer for the department of computer science at the University of Chicago. He is also a contributing editor for MacWEEK. He can be reached on AppleLink at A0199 and over the InterNET at decc@anubs.UChicago.edu. The views expressed are his own.

Continued from Page 42

Macintosh also reduces reliance on typesetters, paste-up artists, illustrators and other costly professionals.

Even the best Macintosh desktop publishing system, however, can't generate better color documents than high-end systems such as Scitex.

Mac technology has yet to reach the point where it is capable of producing a Vogue-type publication or a glossy, coffee-table art book. But for producers of color newsletters, brochures, catalogs, product data sheets and direct-mail pieces, the technology does offer significant savings in both time and money.

Referring to the process whereby continuous tones are broken up into dot patterns, Rudy Burger, president of Avalon Development Corp. said, "The market is for anywhere between 80- to 85-line screens at the low end for newspapers, up to 150-line screens for magazines."

As the technology continues to improve, color desktop publishing systems are expected to make further inroads into traditional printing methods.

Quark XPress and Scitex are at work on Visionary, which will link XPress with the Scitex Response pre-press system for high-resolution color separations. Also, Letraset has concluded an agreement with Crosfield that will enable Ready,Set,Go! files to be read by Crosfield's systems, which scan high-resolu-

Continued on next page

Scanning for color

Image scanners offer the easiest, quickest and most accurate way of placing photographs, line drawings and other graphic images into Macintosh-created documents. The prices and capabilities of Mac-compatible scanners range from the inexpensive and rudimentary to the expensive and powerful.

At the market's high end are color 35mm slide scanners. These units break down a continuous-tone 35mm slide into an array of pixels, with each pixel representing a piece of color information.

At $10,000, the Nikon LS-3500 made by Nikon Inc.'s Electronic Engineering division of Garden City, N.Y., is typical of this kind of scanner. The LS-5000 will read a 35mm frame area at a resolution of 6,144 dpi by 4,096 dpi (4,388 dpi).

Less expensive is the Barneyscan color scanner from Barneyscan Corp. of Berkeley, Calif. This unit offers a 1,000-dpi resolution and scanning times of under three minutes.

Currently, Barneyscan is compatible only with the IBM PC; Mac users must access the product through a local-area network. However, a fully Mac-compatible version is scheduled to be unveiled by Barneyscan on Oct. 3.

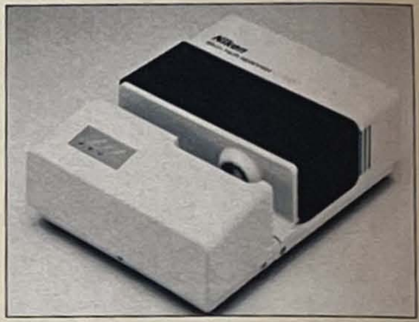
The JX-450 scanner from Sharp Electronics Corp. of Mahwah, N.J., is less expensive than the Barneyscan. Unlike the Nikon LS-3500 and Barneyscan, which are restricted to 35mm slides, the JX-450 scans hard-copy documents measuring up to 8.5 by 17 inches. An optional unit, however, will scan 35mm slides and overhead transparencies. The JX-450 offers 300-dpi resolution.

Sharp also offers the JX-300, a $4,995 flatbed color scanner that's scheduled for release later this year. The JX-300 scans hard-copy documents measuring up to 8.5 by 11 inches. Like the JX-450, the JX-300 provides a 300-dpi resolution.

Not surprisingly, monochrome image scanners are much less expensive than color units. They range in price from about $1,500 to $3,000, depending on the features offered. Resolutions of these units are typically in the 200- to 300-dpi range. Most monochrome scanners are flat-bed-type units, which means that photographs and other original graphics renderings can be fed directly into the unit.

Moderately priced monochrome scanners are marketed by a number of companies, including Apple, Hewlett-Packard, Datacopy of Mountain View, Calif., and Microtek of Gardena, Calif.

Fortunately, a monochrome scanner doesn't necessarily mean monochrome graphic images. Many paint and image-processing programs allow users to tint a scanned monochrome image or to add colors on a selective basis. One particular process, "pseudocoloring" enables the user to assign specific colors to gray values. Although tinting, hand coloring and pseudocoloring can't generate realistic color graphics, they do permit the user to add some pizzazz to otherwise bland images.



Nikon's LS-3500 desktop color scanner can turn both color and monochrome 35mm film positives and negatives into high-resolution electronic images.

"The entire field of image scanning, not to mention color scanning, is new and confusing," said James Aumbry, a Philadelphia-based graphics design consultant. "And right now, the field is not without its flaws and drawbacks."

According to Aumbry, the output of Mac-compatible color scanners is not yet up to professional standards. "It may be good in some light-duty applications, or where you have to get something out in a hurry, but the images tend to look 'digital.' They look as if they've been created on a computer."

The higher-priced color scanners, like the Nikon and Barneyscan units, employ a technique known as dithering, which helps to blur the sharp image edges that are inherent in any digital process.

"Dithering can help," said Aumbry. "But any technique that attempts to simulate a natural process isn't perfect and isn't likely to look as good as the real thing," he said.

James Woodly, a graphics design consultant in Moorestown, N.J., said he believes that color fidelity is the scanner's major shortcoming. "Some of the better units, like the Barneyscan, have very good fidelity. Unfortunately, some of the others I've seen are downright awful," he said.

"The technology isn't quite there yet," Woodly said. "The major problem I see in most scanner-generated color images is an uneven quality in the blacks and grays. The original RGB image has no black, so it's left to the software to insert gray shades. It's hardly a foolproof process," he said.

Both Aumbry and Woodly said they think the color scanner field is headed in the right direction.

"At the rate things are going, I think the technology will be ready to challenge traditional photographic processes in about another two to three years," said Aumbry.
— *By John Edwards*

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Barneyscan Corp.
Barneyscan (35mm color slide scanner):
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Berkeley, Calif. 94710
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Howtek Inc.
Scanmaster/35 (35mm color slide scanner):
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300/PostScript RIP-2: **$66,950;**
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Hauppauge, N.Y. 11788
(516) 434-2016

Nikon Inc.
LS-3000 (35mm color slide scanner):
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Electronic Engineering division
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Garden City, N.Y. 11530
(516) 222-0200

Quark Inc.
Quark XPress 2.0: **$795**
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Suite 100
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(800) 543-7711

Sharp Electronics Corp.
JX-450 (color document/film scanner):
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JX-300 (color document scanner):
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Sharp Plaza
Mahwah, N.J. 07430
(201) 529-9500

Continued from previous page

tion images and perform color separations.

Beyond that, users can look forward to the day when commercial-quality publishing can be generated from the desktop. The pieces (scanners, CPUs, output devices) are all in place and awaiting fine-tuning.

"Everything is moving in the right direction for color desktop publishing to become mainstream," said Burger. "Today, in most people's minds, there's desktop publishing and then there's 'real publishing.' I see that distinction blurring."

Design consultant Woodly agreed. "Right now, we're in the infancy of color desktop publishing. As color pre-press houses begin to recognize the quality of the new Macintosh-based systems, we'll see them shifting a lot of their low- and medium-end work away from their Scitex systems to Macs. They'll recognize the new technology's cost-effectiveness."

"I think we will see a real move toward color desktop publishing over the next year," said Carol McGarry, marketing communications manager for Avalon Development Corp. "There's no reason to tie up a Scitex system, which bills out at something ridiculous like $400 an hour, on doing little separations."

Said Woodly, "It's just a matter of time until color Mac systems catch on. It will be the big story in the printing and publishing industries during 1989." □

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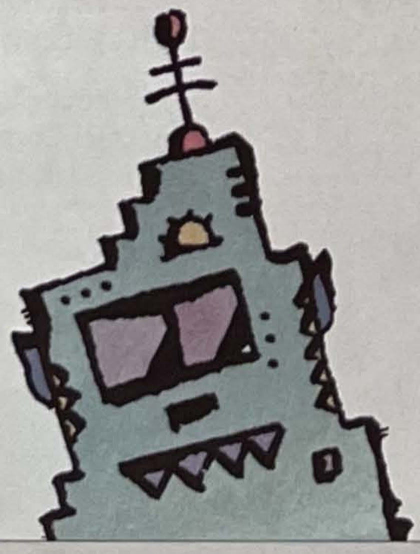

No amateurs or hobbyists, either. Because the 1988 Macintosh Business Conference and Exposition℠ in Anaheim, CA, November 1 – 3, is designed to be strictly business. In other words, this is no place to look for the latest in inter-galactic war games.

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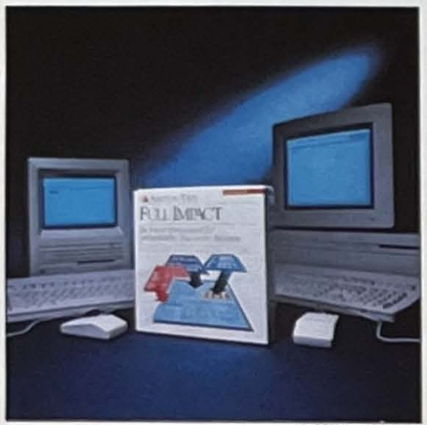
Full Impact takes a swing at the champ

Beats Excel with charts, color, macros



COURTESY ASHTON-TATE

Full Impact

Ashton-Tate
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(213) 329-8000
List price: **$395**

+ Integrated graphics; superior macro language; custom icon bars; color.

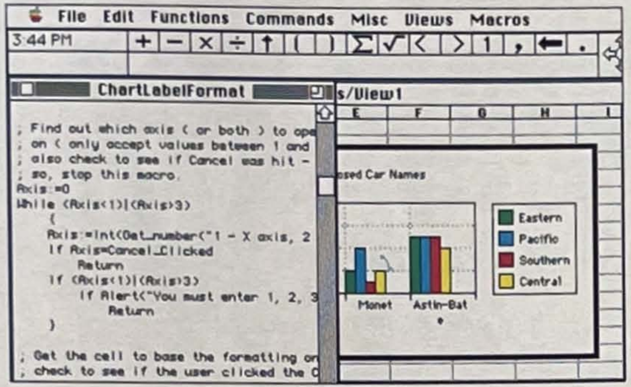
– Few keyboard equivalents; no custom data formats; large document size.

BY CLAY ANDRES

Since 1985, the Macintosh spreadsheet market has been completely dominated by Microsoft Excel. Its powerful combination of speed and features has been challenged only by small companies that could not equal Microsoft's size or marketing muscle. But now software giant Ashton-Tate has delivered Full Impact, the first heavyweight contender for the Mac spreadsheet crown.

Full Impact is the first legitimate challenge to Excel because, like Excel, it combines spreadsheet, charting and database management functions with a macro scripting language. Ashton-Tate hopes to unseat Excel by matching it feature for feature and by hitting it where it is most vulnerable: presentations and ease of use.

Full Impact's rows and columns will look familiar to spreadsheet users. Navigation with keyboard or mouse works as expected, and — as several of Ashton-Tate's example files show — Full Impact can be used just like any other spreadsheet. But integrated graphics, icon bars and a flexible macro language differentiate Full Impact from its predecessors.



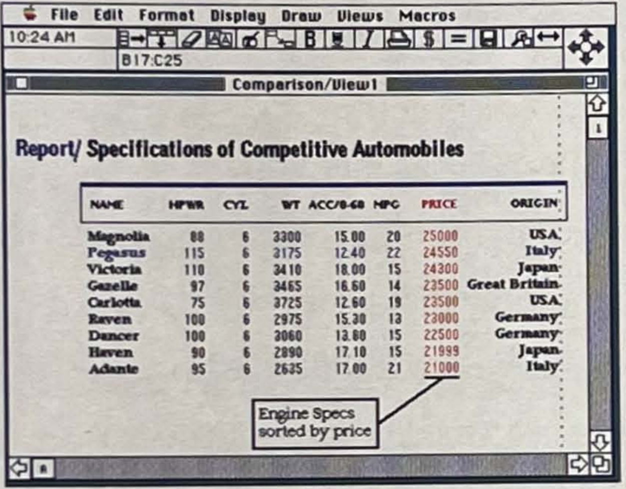
```
; Find out which axis ( or both ) to ope
; on ( only accept values between 1 and
; also check to see if Cancel was hit -
; so, stop this macro.
Axis:=0
While (Axis<1)|(Axis>3)
    {
    Axis:=Int(Get_number("1 - X axis, 2
    If Axis=Cancel_Clicked
        Return
    If (Axis<1)|(Axis>3)
        If Alert("You must enter 1, 2, 3
            Return
    }

; Get the cell to base the formatting on
; check to see if the user clicked the C
```

Even simple spreadsheets can be enlivened with graphic objects and up to eight colors.

Graphic spreadsheet. Full Impact allows graphic objects to be laid on top of the row and column background. These objects can be lines, ovals, rectangles, text, imported pictures or charts. They can be manipulated as expected in a Mac drawing environment.

While you can draw boxes around data or color arrows for emphasis, Full Impact's charts will be most attractive to users. Chart objects are part of the spreadsheet, so they change dynamically with the data and don't require separate documents. Charts can be referred to by name from within functions and macros, making possible some interesting automation. They can be cut or copied as pictures for use in other applications as well. We greatly preferred Full Impact's integration of charts to Excel's clumsy arrangement.



Report/ Specifications of Competitive Automobiles

NAME	HPWR	CYL	WT	ACC/0-60	MPG	PRICE	ORIGIN
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Pegasus	115	6	3175	12.40	22	24550	Italy
Victoria	110	6	3410	18.00	15	24300	Japan
Gazelle	97	6	3465	16.60	14	23500	Great Britain
Carlotta	75	6	3725	12.60	19	23500	USA
Raven	100	6	2975	15.30	13	23000	Germany
Dancer	100	6	3060	13.80	15	22500	Germany
Haven	90	6	2890	17.10	15	21999	Japan
Adante	95	6	2635	17.00	21	21000	Italy

Engine Specs sorted by price

Colorful, dynamic charts update as the data change.

Text typed into paragraph objects can have multiple fonts, sizes and styles. Text remains editable even when rotated (a feature we would like to see in more drawing programs). Each cell can have its own text attributes.

Color can be applied to any object in some fashion or another. Outlines, fills, chart components, even text can be assigned a color or a pattern or both. Full Impact uses QuickDraw's original eight colors rather than the 16.7 million possible. Pictures imported into Full Impact, however, retain all their colors.

Presenting, not publishing. Full Impact's graphics and text tools give it a big advantage over Excel in making attractive presentations, but Ashton-Tate's claim that Full Impact has "the presentation power of desktop publishing" is simply hype. There are no tools — like rulers or guidelines — to facilitate accurate placement of objects on the page. There is a Page Layout view that allows you to set headers and footers, but you can't manipulate any objects or data in this mode. The text editing and formatting features, while excellent in a spreadsheet, are not quite as good as those in MacWrite. We are sure that a spreadsheet generated in Full Impact will look more attractive than one from Excel, but we'll save our annual reports for another program.

Icons on top. The principle behind icon bars is that clicking once on a picture is easier than hunting for commands on a menu. Full Impact comes with three pre-defined sets of icons, and each document can contain up to four. Only one set of icons is visible at a time, but switching between sets is easy. The function of each icon can be customized to your choice of commands or macros, and the pictures can be changed in a Fat Bits-type editor. Best of all, you can save sets to use in different spreadsheets.

Full Impact's menus are more logically arranged than Excel's, but while Full Impact is strong on the mouse, it is weak on the keyboard. The absence of command-key equivalents is noticeable, especially in a program trying to replace Excel.

See FULL IMPACT, next page

THE WEEK IN REVIEWS

Defragmenting with Disk Express

BY DENNIS KLATZKIN

If you've ever watched as the unreserved seats in a stadium fill up, you know how the empty seats become more and more scattered. Groups who arrive late often have to split up and sit in separate locations.

Similarly, as files fill up a floppy or hard disk, and as old files are deleted, the free space becomes increasingly non-contiguous. New files, or ones that grow in size, have to be fragmented — split up into separate disk sectors — and drive performance slows down because the drive mechanism takes longer to access the files' scattered parts.

Disk defragmenters are programs that reorganize a disk so that files reside in adjacent sectors again. There are several utilities on the market that copy each fragmented file onto contiguous free space, assuming enough such space exists. But ALSoft's Disk Express has always been the Rolls Royce of the group. Only it truly optimizes and prioritizes a disk, making all files contiguous, moving them to one side of the disk so that the resulting free space is grouped together, placing files that are most likely to grow (such as data documents) closest to the unused space to minimize future fragmentation and optimizing the disk's directory.

For these reasons, Disk Express takes longer to operate than the other programs — that's the most often-heard complaint about it. In response, Disk Express 1.5 has a newly added Quick Optimize mode that, like other defragmenters, simply moves files to contiguous sectors and nothing more. It's not as thorough an operation as the program's original mode, but it's very speedy and can be used for incremental defragmenting with only an occasional full optimization needed. Version 1.5 also adds an informative graphical display of a disk's overall organization.

Indulge yourself in some "frag-waiving" with Disk Express 1.5; it sells for $49.95. ALSoft Inc. can be reached at P.O. Box 927, Spring, Texas 77383-0927; (713) 353-4090.

Unsung heroes. When we review software, our attention is usually aimed at the designers, programmers and marketers. But there are others — the unsung heroes of the industry — whose efforts are essential but overlooked.

Consider the shrink-wrappers and the gummy-label manufacturers: Their mission is to seal and adhere, and they do indeed. I've had to practically blast the shrink-wrap off some boxes, and removing disk labels is tougher than peeling grapes — they're nothing less than engineering triumphs. Why don't we have these people working on the O-rings?

And speaking of technological feats, what about the folks who design the software boxes that retain their shape perfectly, even though there's so little inside? The laws of physics seem to demand that the boxes implode from the vacuum. But they look as stuffed as a tin of sardines. Now that's high tech!

We can appreciate the hurdles that these people encounter, because so many delays in product shipments are attributed to last-minute packaging problems. The next time you question the ever-rising cost of software, remember that technology like this doesn't come cheap. ☐

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Continued from previous page

Full database. Full Impact's approach to database management is similar to Excel's, but more flexible. Records exist in rows and fields in columns. Any named range can be a database, so multiple databases can be defined within a single document.

To extract data, you define a criterion range, select an output range and choose the Extract command. There is no Find command.

Full Impact can sort any number of fields and automatically recognizes records, so you don't need to highlight the database range. It has the most flexible Sort command in any Mac spreadsheet.

Making macros. Full Impact can create both global and local macros. Its robust language includes a complete set of looping structures, assignment statements, functions to control every aspect of the program and capabilities for subroutines. The intelligent editor even has a built-in syntax checker. Like Excel, it can translate keystrokes and commands into macros as you execute them. Full Impact macros are edited directly rather than as cells of a spreadsheet and do not require separate documents.

Full Impact's language and editing tools are more powerful and much easier to use than Excel's. However, Full Impact lacks Excel 1.5's capability to create macros with their own menus. Function names on a menu are often more clear than icons, and we would like to have both alternatives.

Special features. A Multiple Views feature shows different parts of the spreadsheet in separate windows. This is useful if you want the spreadsheet in one window and a chart in another, or different tables on screen at the same time. These views are saved and can be reused at any time, making presentations easy to duplicate, even from a working spreadsheet.

Full Impact cannot read or write Excel files directly — which is a problem if Ashton-Tate expects to convert Excel users. However, data can be imported and exported in dBASE, SYLK, DIF, WKS and text formats, so even mildly experienced users should have no problem transferring their work.

One special feature of Excel that we missed in Full Impact is the ability to define custom data formats. It is impossible to include special characters like "£" and "¥" with the data in Full Impact.

Perhaps the best feature is not in the manuals at all. Full Impact can support external commands written in compiled languages like C and Pascal. These commands can extend the capabilities of Full Impact to encompass special functions or custom alogorithms. Ashton-Tate released documentation for Full Impact externals at its developers conference earlier this month. Anyone interested in recieving this information should contact Ashton-Tate.

Performance. Full Impact uses disk-based virtual memory, which makes it capable of creating spreadsheets larger than your Mac's RAM. Full Impact uses the available RAM and stores any remaining portions of the spreadsheet to disk. The disadvantage is that performance deteriorates when data needs to be retrieved from disk.

Full Impact was 10 percent to 20 percent slower than Excel in our benchmark testing. This difference will be noticeable only in intensively computational work. When you start adding graphics and charts to your spreadsheet, however, screen scrolling becomes almost sluggish. This is typical of most color graphics applications, but it leaves the impression that Full Impact is slower than Excel.

Disk space may be a problem for Full Impact users. An empty Full Impact document is 17 Kbytes, and that increases rapidly when you start adding data and graphics. Full Impact documents are several times larger than similar ones from Excel, so if you generate a lot of spreadsheets, make sure your hard disk is big enough.

Support (for sale). Full Impact comes with several manuals and additional pamphlets. They are well-written and easy to use but not very well-indexed.

The on-line help is arranged like a complete though brief reference manual. Typing Command-? brings up the help topic most applicable to the current cursor position.

Ashton-Tate offers 90 days of free support via a toll call. Various extended service plans ranging from $50 to $950 per year and a free bulletin-board service are also available.

We called technical support several times. The staff members were always friendly and tried to be helpful, but it was obvious they were still learning the program. Given time, they did call back with answers to our more difficult questions.

Conclusions. With a large installed base of users and add-on products, Excel has an enormous advantage over Full Impact but Full Impact is a strong alternative to Excel, especially for novices. Its superior macro language and external command options may be the keys to Full Impact's success with sophisticated users, but only by quickly creating a substantial aftermarket can Ashton-Tate hope to overcome Microsoft's substantial lead.

However, Microsoft is not standing still and waiting for Full Impact to hit it between the eyes. Excel Version 1.5 was released this summer, and Version 2.0, which promises more presentation and formatting features, is scheduled for later this year.

Whatever the outcome of the competition between Microsoft and Ashton-Tate to conquer the spreadsheet market, it is clear that what had become a predictable area of software development suddenly is much more lively. ☐

Clay Andres is a free-lance writer and president of Terse, a Macintosh consulting and development company in Palo Alto, Calif.

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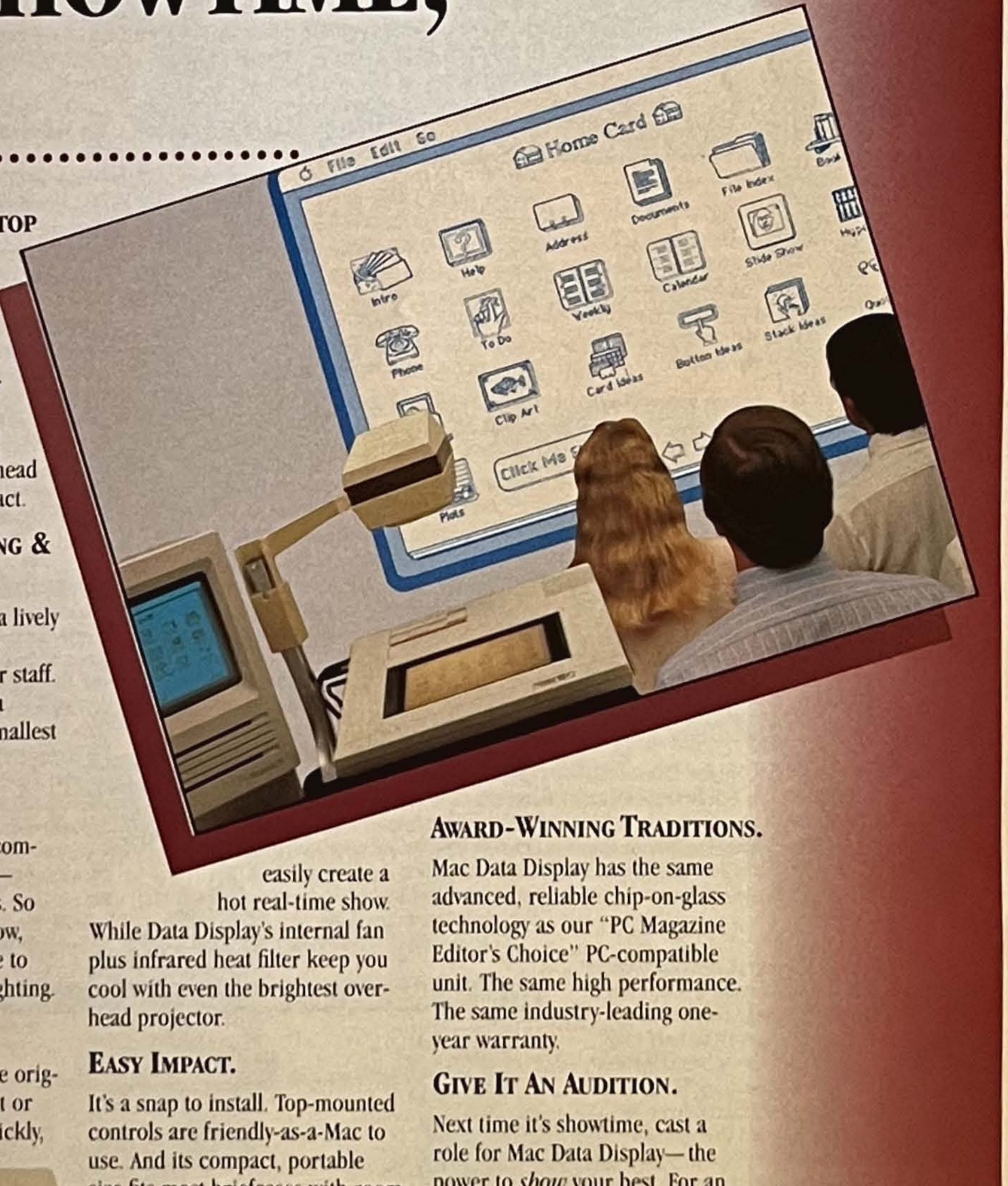

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+ Uses modem port, so cables don't have to be switched; works reliably; toll-free support.

− Suffers from generic problems of remote AppleTalk; Installer scripts need polishing; no dial-out capability.

BY RIC FORD

The TeleNode from DataSpace is a product that gives you access to printers, electronic mail, files servers and other services of a remote AppleTalk LAN when your only physical connection to that network is a phone line.

COURTESY DATASPACE

Like Shiva's NetSerial, Hayes' Interbridge and Solana's R-Server, the TeleNode is a box that physically connects LocalTalk-compatible cabling and a modem. Unlike the others, the TeleNode has only one function: to allow individual remote users to access services on the AppleTalk LAN.

Bleeding edge. In general, remote network connections on the Macintosh are characterized by problems that make them anything but plug-and-play processes. The user may have to try a number of times before getting connected, and the modem may be busy with another remote user. Special modems or phone lines may be needed to eliminate line noise, and high-speed modems in particular may have trouble staying connected. Recovery from lost connections is typically slow and painful, and all functions are at the mercy of problems on the host LAN and the capabilities of the network manager.

Standard 2,400-bit-per-second modems provide reasonable performance for simple electronic mail, but AppleShare can be excruciatingly slow at this speed. Modems that operate at 9,600 bps are standardized only in the very expensive range, where they use the V.32 protocol. More moderately priced 9,600-bps modems, with their nonstandard signaling schemes, suffer from a variety of performance and configuration limitations. They simply weren't designed with remote AppleTalk networks in mind.

These problems, although not the fault of DataSpace or the TeleNode, make remote networking less fun than it would seem at first blush.

Installation. The TeleNode Manager application lets a network manager install and configure the software that resides in the TeleNode itself. Resource files and a script for Apple's Installer program provide the means for setting up software on the remote Macintoshes. Each remote Mac also requires a modem compatible with the one connected to the TeleNode.

Installation of the TeleNode on the LAN is fairly straightforward. There's no need to play detective with AppleTalk node numbers and no need to shut down the whole network as we had to do with the R-Server. The trickiest part of the process is determining the proper DIP switch and parameter settings for the modem.

After setting up the modem, the network manager must connect the Mac directly to the TeleNode to run the TeleNode Manager application. With this, an optional password for access to the LAN can be set, and a variety of predefined modem configurations can be chosen. The TeleNode is then connected in its normal bridge configuration (see diagram below) and turned on. It configures the modem automatically.

After getting the TeleNode installed, the network manager has to configure the software for each remote Mac. First, Apple's Installer is used to put the necessary resources on all the remote Macs' startup disks. Then the type of modem, phone number and optional password is entered for each.

Operation. Remote AppleTalk should be fairly transparent. It should be easy for a user to switch between the remote network and a local printer or local network. This hasn't always been the case. In the past, some vendors have relied on an unpolished desk accessory called Async AppleTalk that required switching cables between the printer port and modem port.

Fortunately, the TeleNode doesn't require cable juggling. Once the DataSpace software is installed, the Network cdev (Control Panel device) allows painless switching between local and remote networks. Once connected to the remote LAN, it is simply a matter of using the Chooser DA to access any files, electronic mail and printers that are available. Of course, client software, like the AppleShare workstation file or Microsoft Mail Startup document (INIT), must be installed on each remote Mac to communicate with the servers.

Testing. We set up the simple remote AppleTalk configuration shown in the diagram below and tested the TeleNode by using AppleShare and Microsoft Mail. We tried a variety of modems: U.S. Robotics' Courier 2400, Microcom 9624c and an inexpensive Avatex 2400. Modems don't have to be the same at the TeleNode and remote ends, but they must be compatible at some speed.

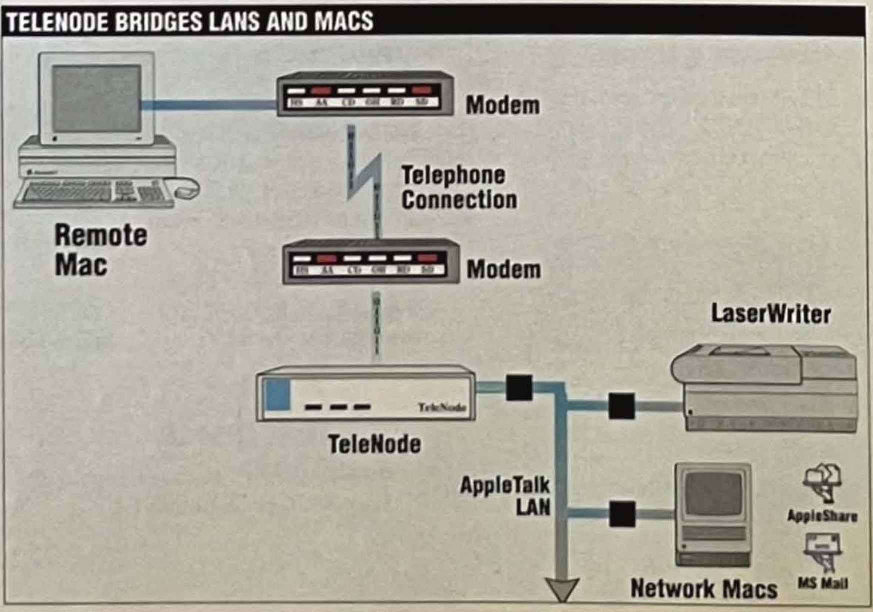
Our testing uncovered no problems with the TeleNode in reading and writing files on the AppleShare server, printing to a LaserWriter IINTX or sending both text messages and files through Microsoft Mail. While it may not sound impressive, executing these simple tasks is a real accomplishment when it is done across a remote AppleTalk bridge.

Performance. Performance of remote AppleTalk is, at best, comparable to standard telecommunications services. Using 2,400-bps modems, we saw real data transfer rates of about 6,000 bytes per minute using AppleShare and the Finder, and 11,000 bytes per minute using Microsoft Mail. These speeds are a snail's pace compared with normal AppleTalk, but are better than no connection at all.

Conclusions. The TeleNode comes with cables (not including a network cabling connector), a one-year warranty on parts and labor and a toll-free telephone support number. We had a few problems with the Installer scripts but were able to get the remote software successfully installed with the help of DataSpace's technical support staff.

The TeleNode does what it claims to do in the difficult environment of remote AppleTalk. It does so dependably and does not demand too much handholding from either users or network managers. If you are in the market for a bridge between an AppleTalk LAN and remote Macs with modems, the TeleNode deserves consideration. □

TELENODE BRIDGES LANS AND MACS



JERRY SPAGNOLI

Shedding more light on image editing

Digital Darkroom 1.0

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+ Innovative new tools such as the Magic Wand, AutoTrace, Paste Controls and Advanced Halftoning; import/export flexibility.

− Inability to edit autotraces; entire image resides in RAM.

BY ROBIN WEBSTER

Just as desktop publishing dramatically altered the way in which words were committed to the printed page, so too is desktop image processing altering our notions of how scanned-in pictures or original artwork can be edited.

Until recently, ImageStudio from Letraset was the main player in this field, offering the ability to retouch, enhance and selectively merge portions of scanned gray-scale images. However, Silicon Beach Software has definitely upped the ante with the introduction of Digital Darkroom.

Gray-scale image processing is simple in theory: Take an image, scan it into a form usable by your Mac and then edit it as you desire. The tricky thing is deciding how to let professionals familiar with scalpels, reducing chemicals, retouching inks and airbrushes transfer their skills to the Mac environment.

Letraset's ImageStudio is designed to operate primarily on a pixel-by-pixel basis. If you want to remove a flaw in an image, you select one of the MacPaint-like retouching tools and draw over the problem area with the appropriate gray shade(s) — usually at some high level of magnification.

Command key/tool combinations even allow for specific "textures" in an image to be picked up by retouching tools and used as a paint pattern elsewhere. ImageStudio's retouching tools — Paintbrush, Pencil, Eraser, Rubber Stamp for textures, Charcoal and Water Drop for blur effects — are designed to mirror and extend the characteristics of their real-world mechanical and chemical counterparts.

The Magic Wand. In comparison, Digital Darkroom's tool palette initially appears to be

Continued on next page

Continued from previous page

quite sparse. There are only four tools aside from the selection icons: a grabber hand, an airbrush, a paintbrush and a new tool icon known as the Magic Wand. But it's the Magic Wand that points up the major difference between the two competing products.

While Digital Darkroom certainly allows for pixel-level retouching and texture painting, it is founded on the fundamentally different idea that an image-processing application should allow you to pinpoint areas in an image based on their gray-scale values — hence the Magic Wand.

The secret of the Magic Wand is that it selects shapes by detecting the edges, or boundaries, of areas with the same gray-scale values and texture. If detailed work is necessary, you can use the Paint If dialog box to choose precisely which gray values will be affected by the current brush tool. In other words, you can be a little sloppy and let the brush roam.

Additionally, while the Magic Wand is active or one of the standard selection tools is in use, other palette options and icons are displayed. The four options New, Add, Refine and Subtract control how the selection tools operate when used in successive locations.

The two final tool icons associated with selections are the Scissors and the somewhat dramatically named Lightning Bolt. The Scissors tool is very useful in that it allows you to to trim or "cut" selections into separate pieces. The Lightning Bolt is merely used to deselect selections one at a time. So-called hot keys allow you to conjure these functions from the keyboard if you prefer, avoiding repetitive trips to the tool palette.

At the bottom of the tool palette there are two slider controls that can be dragged to set the brightness and contrast of an image. By themselves, these controls can instantly produce effects that might have taken hours to get right in a real darkroom. When teamed up with the Magic Wand, they are doubly powerful.

If, for example, you want to select an area of an image that contains a wide range of gray values, you drag the contrast slider up until the grays are displayed as black and then use the Magic Wand. Once an area is selected in this way, you can reset the contrast back to normal and then proceed to edit or enhance the image.

Digital Darkroom makes it possible to radically alter the look of an image on the display and yet return to the original settings by maintaining both a copy of the original image (the base image) and a display image. Differences between these two versions can be viewed at any time via a special image graph window.

Combining images. Clearly, an image-processing application won't be of much use unless it is possible to realistically combine portions of different pictures into one image.

If you were simply to copy part of one image and paste it into another, the effect would not be realistic at all; the pasted image would simply obscure the main image. On the other hand, Digital Darkroom's Paste Controls provide some remarkable capabilities for interactively integrating images from different sources. By adjusting the settings on this dialog box you can control which grays in the target image are pasted on by the incoming "source" image. Once that is set, you can then choose whether the source image should replace the target image, be blended with the target image, be made darker or lighter, or be dissolved randomly together.

Digital Darkroom normally saves gray-scale image files in PICT2 or its own proprietary Archive format, but it can also produce TIFF and ThunderScan formats, and it provides options to export files in one-bit TIFF, MacPaint, PICT and EPS (Encapsulated PostScript) formats. Digital Darkroom cannot directly open ImageStudio files.

Autotracing. Other noteworthy Digital Darkroom features are the Transform options; AutoTrace image tracing; and Advanced Halftoning, a new printing algorithm for outputting images to 300-dpi laser printers.

Even though Digital Darkroom comes with a very flexible AutoTrace feature (it separately traces each gray-value shape that it finds rather than just generating a single object outline), it falls short by not offering any way to edit the resulting traces. Instead, you must save tracings to disk in either PICT or Adobe Illustrator format where they can be accessed by other draw-type applications.

Printing. Digital Darkroom images can be output to ImageWriters, laser printers or phototypesetters. However, realizing that many Macintosh users will be using standard 300-dpi laser printers, Digital Darkroom incorporates a new Advanced Halftoning option.

Essentially, Advanced Halftoning provides greater control over the way in which an image is produced on both PostScript and non-PostScript printers by allowing the user to set the degree of focus and exposure. The focus options change the apparent sharpness of a printed image, while the exposure settings compensate for print quality variations. One drawback we noticed while using the Advanced Halftoning option is that it can take substantially longer to obtain a printout, and it often requires a fair degree of experimentation with the various focus and exposure settings to get the right look.

Digital Darkroom requires that an entire picture reside in memory before it can be opened. This gives it speedy operation but can also result in out-of-memory problems with large scanned images.

Conclusions. In terms of overall design, Digital Darkroom scores high marks. It is possible to extend its capabilities via Silicon Beach Software's new plug-in module concept. Essentially, these are independently developed programs or utilities that can be accessed from within Digital Darkroom and which can add specialized capabilities such as filter effects or support for video and scanner hardware.

This programming innovation, which is likely to be copied by other software vendors, is just one of the ways in which Digital Darkroom fulfills its promise. It lives up to its billing as a tool for darkroom professionals. ☐

Robin Webster is a consultant and writer on microcomputer topics.

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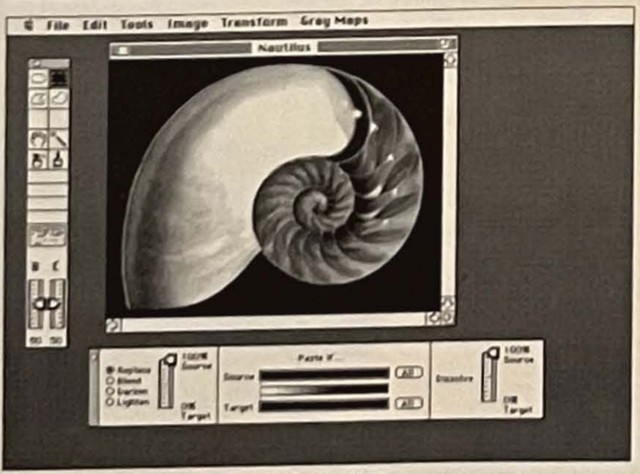

Digital Darkroom has a simple tool palette.

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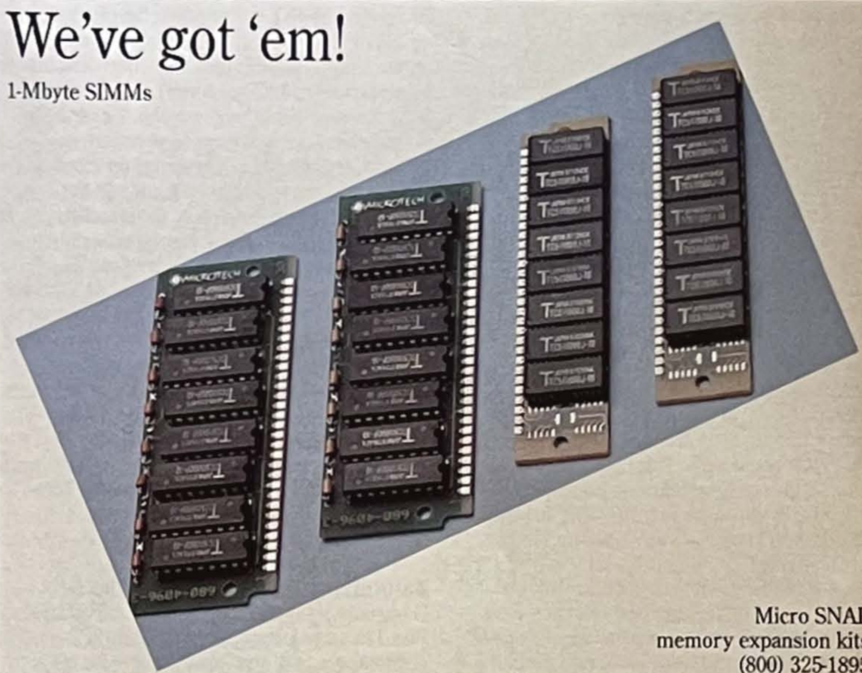

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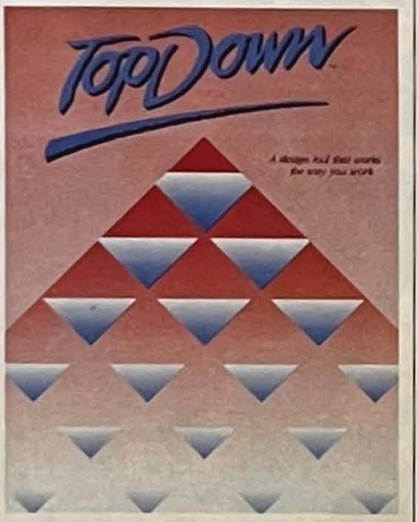

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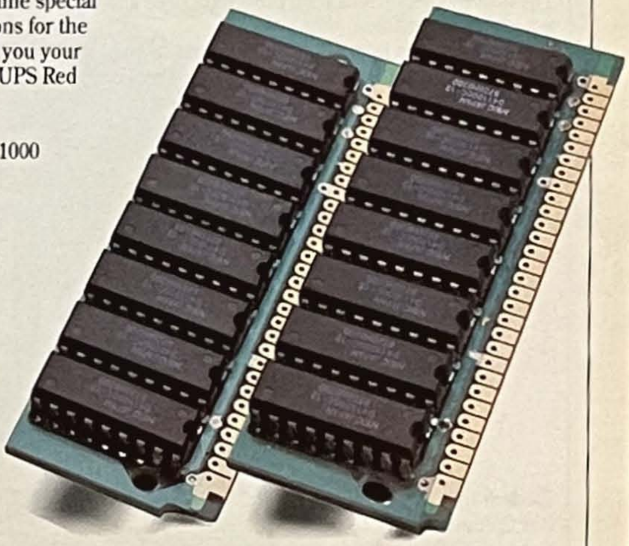

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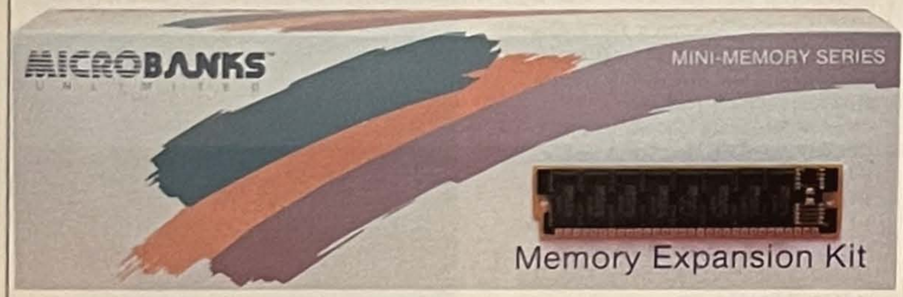

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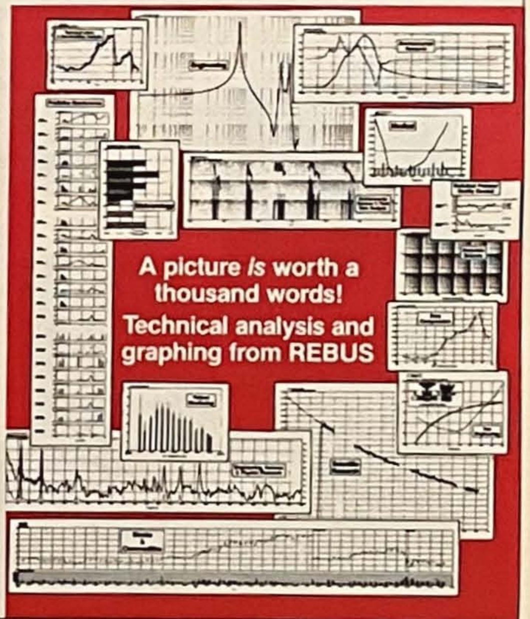
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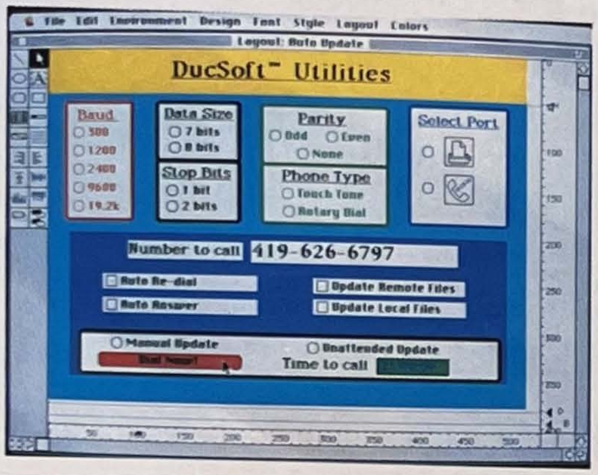

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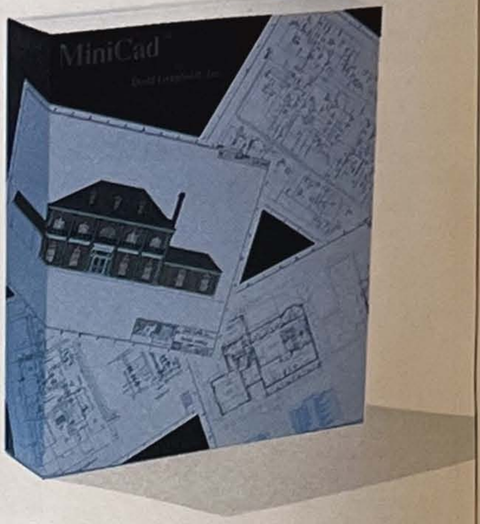

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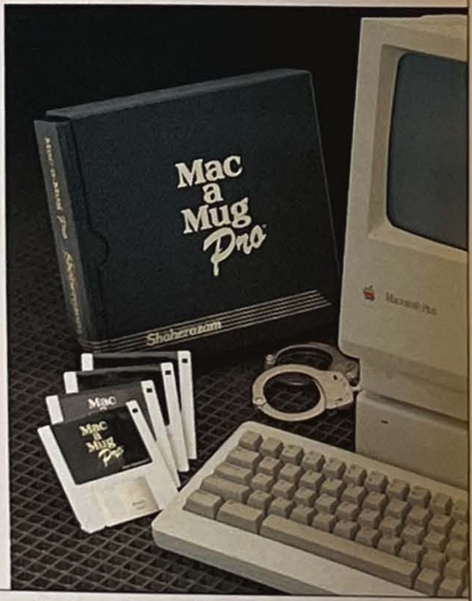

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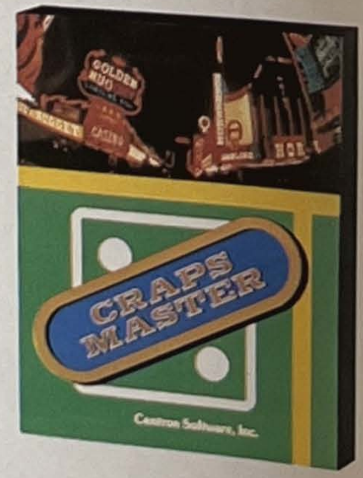

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October 11
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October 18
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Closes October 7

October 25
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Closes October 14

November 1
Scanners, Word processing
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Desktop processing, Communications
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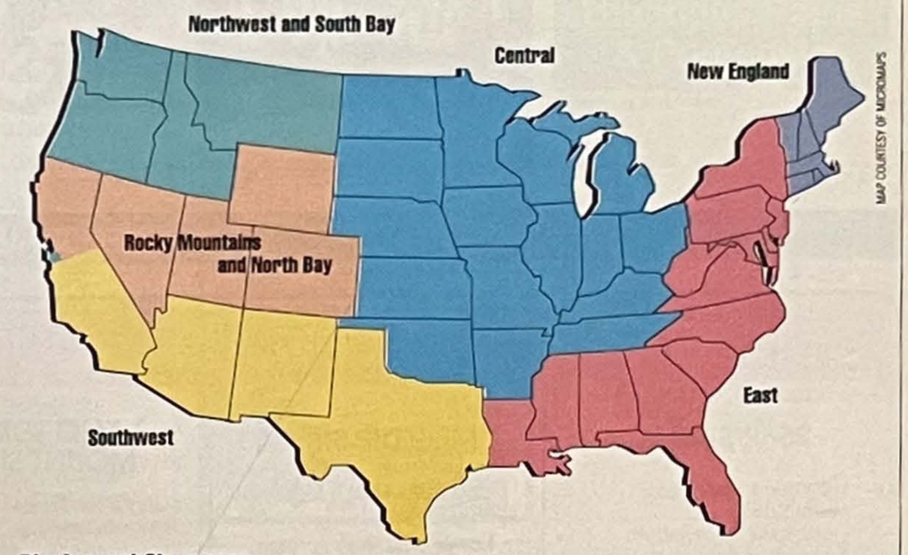

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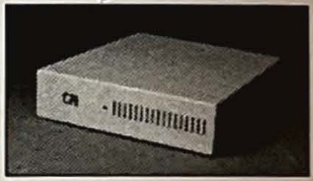

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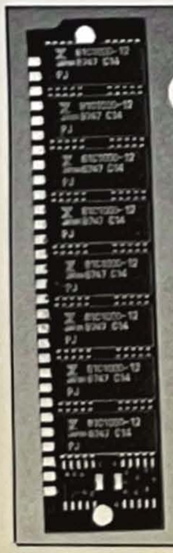

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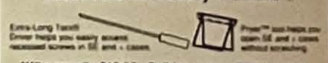

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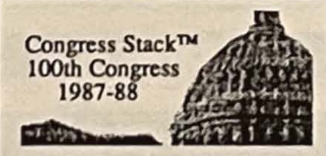

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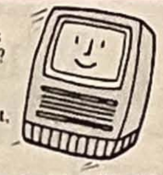

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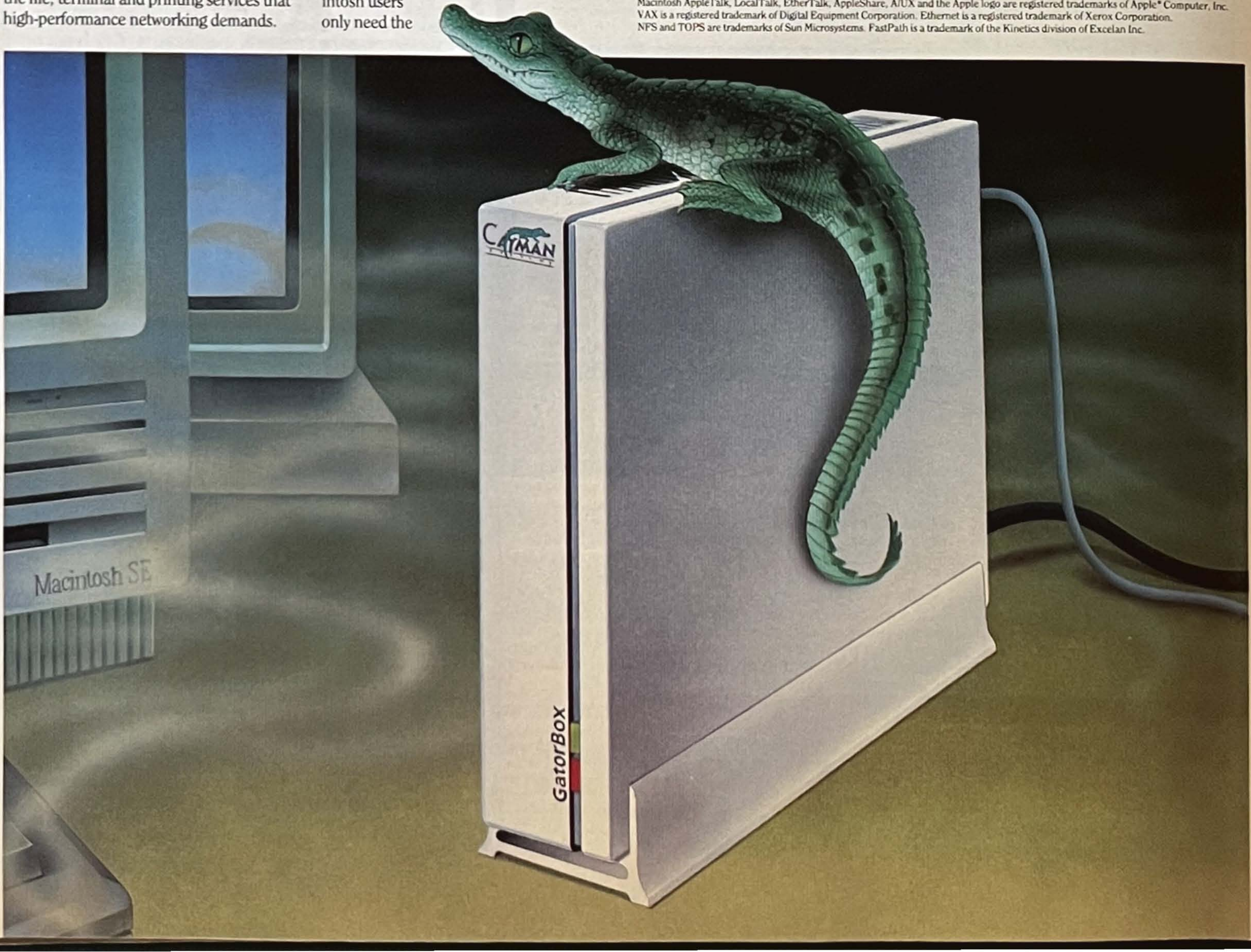


Dealers negative on price hike

Prices could give PCs an edge

BY RENEE MATHEWS

Dealers last week expressed mixed reactions to the announcement of Apple's boldest price increase to date.

CHANNEL NEWS

The new pricing boosts the suggested retail price of a base-model Mac II by almost 30 percent, while raising the cost of the SE, the LaserWriter IINT and the NTX, and a long list of other Apple products by smaller margins (see MacWEEK, Sept. 20, 1988).

Although some dealers said the move may enable them to increase profit margins on Apple systems, they also said the new pricing structure could have an adverse effect on their ability to compete with resellers offering lower-cost IBM PC-compatible systems.

"It's definitely not good PR for Apple," said one independent dealer who asked not to be identified. "Everyone else in the computer industry is bringing their prices down and Apple has the audacity to raise its prices. All I can say is they're a different breed."

Independent resellers in particular expressed fear of heightened competitive pressure from larger chains, which receive more substantial discounts based on their volume purchases and in turn are able to pass the savings along to their customers.

On the positive side, the higher prices may help to curb the backlogs that dealers have been experiencing with a variety of Apple products, including the Mac Plus, SE and II, and the LaserWriters. According to Mark Wozniak, general manager at Computer Plus in Sunnyvale, Calif., the only way dealers have been able to ensure immediate delivery to customers and maintain sales has been to invest heavily in inventory.

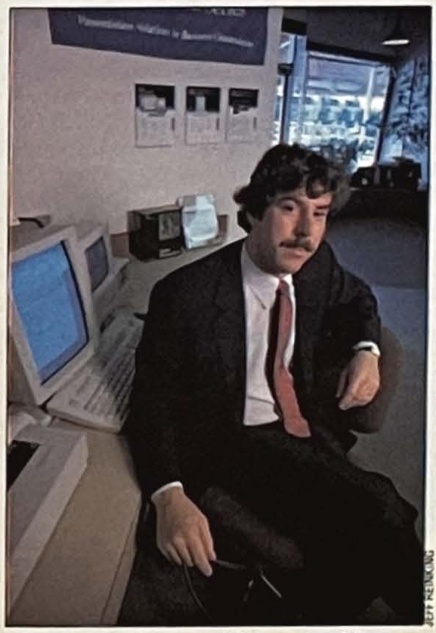
"It's still a little early to jump on the pessimistic bandwagon," said Dawn Holley, manager of Computer Craft in Houston. "But we haven't had too much interest in the Mac II since the increase."

Holley said that the Computer Craft store in Houston has experienced a number of cancellations on Macintosh II orders since the announcement.

"It was a one-two hit for us, not only because the price increase tacked an additional 30 percent onto the Mac II price, but also because we were unable to get the product in stock in the first place to provide immediate delivery," Holley said. "So we lost business on equipment that could have been sold at the previous price. Any way you look at it, it's not a pretty picture."

According to Wozniak, Apple's new pricing structure puts added pressure on dealers who purchase "bare-bones" Macs and upgrade the systems with third-party drives.

See DEALERS, next page



Dealer Mark Wozniak said the price hikes will hurt dealers who buy "bare-bones" Macs and upgrade with third-party drives.

Management buy-out revives SuperMac

BY CLIFF LEHMAN

MOUNTAIN VIEW, Calif. — SuperMac Technology Inc., rebounding from its sojourn as a subsidiary of Scientific Micro Systems Inc., is once again a stand-alone company headed by its founder, Steve Edelman, now chairman and chief scientist.

The $8.5 million management buy-out, financed by the sale of equity in the newest incarnation of SuperMac, leaves the company free from the cash shortages and debt still plaguing its erstwhile parent company.

"The [newly independent] company is extremely well-financed," said Lawrence Finch, SuperMac's new president and CEO. "It is funded by [Silicon] Valley's leading venture-capital groups. You can't get better financial backing than that."

The contingent of seven venture capitalist groups is led by Sigma Partners of San Jose, Calif. In addition, Edelman and others have contributed to the funding, Edelman said.

SuperMac, founded by Edelman in 1985, met with instant success in the hard disk market. In 1987 the company merged with SMS in an effort to get the financial backing it needed to move into the monitor and graphics board business.

The move did not pan out.

SMS has been hampered by debt and cash shortages since the beginning of 1988. The sale of SuperMac was part of SMS' and SuperMac's efforts to sort out those problems.

"We went with the management-led buy-out because SMS didn't have the resources and didn't have the understanding of the market that SuperMac needed," Edelman said.

"You must have a management team that understands the market and is committed to making sure the resources are there," he said. "We have that now."

The company is looking forward to bringing new products to market and delivering on back orders for existing products, Edelman said.

"The good news is that during the past six months our R&D has developed a host of great new products," he said.

"As we get the shipment of existing products into line with the demand for them, we will be able to get the new ones out there." ☐

Presentation market still evolving

BY CONNIE GUGLIELMO

CUPERTINO, Calif. — The year that has passed since Apple officially anointed desktop presentations as a key target market for the Mac has seen a raft of new product introductions, but the category has not yet reached its expected potential, and industry observers are divided over whether it will ever be as hugely successful a business market as Apple predicts.

As part of its ongoing effort to lure Fortune 500 companies to the Mac, Apple launched a desktop presentation marketing campaign at the Seybold Desktop Publishing Conference in September 1987.

The decision was prompted in large part by the release of PowerPoint, a program with an integrated set of features designed to help business users create presentation materials, said Ames Cornish, Apple's marketing manager for desktop presentations. Now marketed by Microsoft Corp., PowerPoint was unveiled in the spring of 1987 by Forethought Inc.

Software developers were quick to follow Apple's lead. In the past year, the roster of announced or shipping desktop presentation packages has gone from one to seven.

Anticipating competition in the market it helped create, Microsoft gave PowerPoint a face lift and released an improved Version 2.0 in May. Soon after, Cricket Presents... from Cricket Software and Stand-Out! (formerly ReadySetShow!) from Letraset USA shipped.

See PRESENTATION, next page

THIS WEEK

- Dealers react to Apple price hike, this page.
- SuperMac is on its feet again, this page.
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- Adobe profits (as usual) are up, Page 63.
- From idea to a dealer near you, Page 64.
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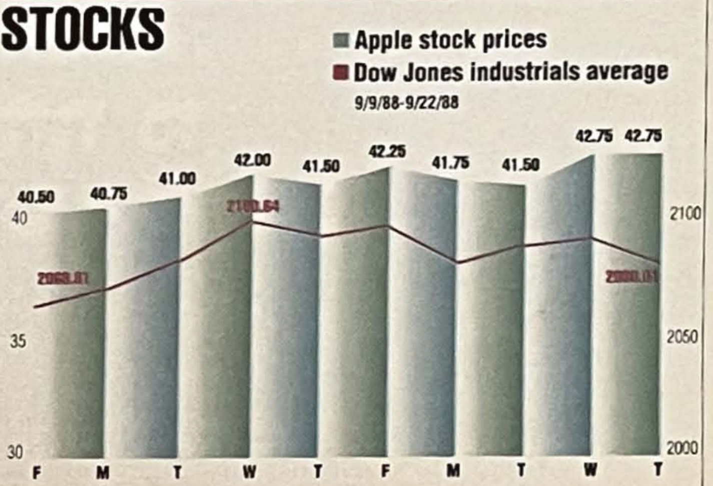
STOCKS



Macintosh-related stocks

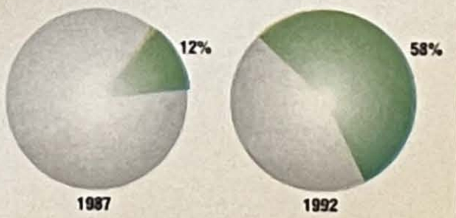
COMPANY	SEPT. 15	SEPT. 22	% CHANGE
ADOBE	40.50	43.75	+8.02
ALDUS	17.50	17.25	-1.43
APPLE	**42.00**	**42.75**	**+1.78**
ASHTON-TATE	27.25	26.75	-1.83
BUSINESSLAND	12.50	13.00	+4.00
MICROSOFT	54.50	53.75	+1.38
MOTOROLA	42.88	43.50	+1.44
QMS	8.13	7.88	-3.07
SEAGATE	9.38	9.38	0.00
3COM	18.25	15.75	-13.70
DOW JONES	**2092.28**	**2080.01**	—

MARKETWEEK

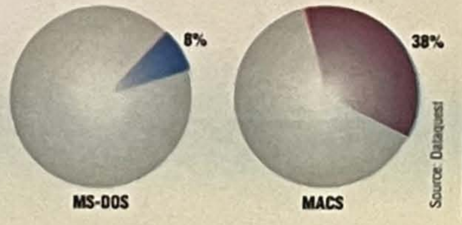
Mac leads in networking

A personal computing revolution that will change how we work is now taking place (again). In 1987 12 percent of all personal computers in U.S. work environments were connected to a network. But by 1992, 58 percent will be connected, according to Dataquest, a San Jose, Calif., market research company. At present the Mac is the top banana in the networking revolution. Thirty-eight percent of Macs in work environments are networked; only 8 percent of IBM PCs are. — *By Griffin Dix*

Projected growth of networked personal computers in work environment



Percentage of PCs and Macs currently networked in work environment



Source: Dataquest

DEALERS

Continued from previous page

Because third-party products often combine better performance, lower prices and heftier dealer margins, independents often use this approach to compete on more equal footing with chains that buy in larger volume, which enables them to offer greater discounts on Apple-labeled products.

But Apple's recent announcement set prices at about twice as much, on a percentage basis, for floppy-only models of the SE and Mac II as for models equipped with hard drives. The net effect makes it more difficult for dealers adding third-party storage to beat the prices charged by straight-Apple resellers.

"Chains have a 12 to 16 percent margin advantage over independents," said Wozniak. "A good portion of that advantage was made up to independents with third-party drive options. Now with the price increase, it's going to be more difficult to play the game."

The implementation of Apple's new pricing structure varies among dealers. Based on the inventory they have on hand, some dealers are forced to adopt the new prices immediately. Other well-stocked resellers are able to postpone the increase by as much as 30 days or until orders that were on the books prior to the announcement are filled and depleted. □

PRESENTATION

Continued from previous page

The coming months will see the release of MORE II from Symantec Corp., Persuasion from Aldus Corp., Mac Pixie from Zenographics Inc. and a Mac version of Harvard Graphics from Software Publishing Corp.

"In just one year, presentations has gone from a software package and a printer to quite a range of solutions," Cornish said. "[Desktop] publishing, by contrast, took about three years to do that."

Using Apple's own market research and the figures from industry research groups, such as Desktop Presentations Inc. of Mountain View, Calif., Cornish predicted tremendous growth over the next four years.

"In 1988 the market for desktop presentation systems — hardware and software — is a couple of hundred million," Cornish said. "In 1992, everyone's projecting it's going to be about a $1.8 billion market."

Peter Polash, author of Aldus Persuasion, also has predicted a sharp increase in computer-generated presentations over the next year — partly due to the release of Persuasion.

"I don't think there has been a product out that gave people a significant advantage and convinced them to buy into the market," Polash said. "I think people will be attracted to the program because of the degree to which the presentation process is automated but still provides the user with complete flexibility to change things."

Some industry analysts, like Stewart Alsop, publisher of the PC Letter of Redwood City, Calif., remain unconvinced. In a recent newsletter, Alsop discussed what he called the hoopla about desktop presentations.

"There is some truth in the belief that it is easier to create presentations on a Macintosh and that that will grow the marketplace for software that helps create presentations," Alsop wrote. "But the market for desktop presentation software will never be the kind of monster that desktop publishing has created."

One reason: "Much of what presentation products do can be and frequently should be done as an extension of existing applications software so that the user doesn't have to switch programs," Alsop wrote, predicting that the market for presentation software will top off at 5,000 copies per month.

Peter Winer, lead programmer on the development team behind MORE II, said he shares the view that business users are not interested in packages solely devoted to presentations.

"I question whether there's a desktop presentation market per se or a market for a package that only does presentations," Winer said.

Symantec has emphasized MORE II's improved outlining and word processing, along with its drawing and presentation tools, in promoting the new version, which is due to be released later this month. The company sees a majority of its sales coming from the established base of MORE users, including more than 3,000 registered users within Apple.

"We've tried to make a product that has a lot of productivity features as well as the capability to produce beautiful visuals," Winer said. "The key difference between MORE and the other products is that we have something that allows users to plan and prepare their work throughout their normal workday and then turn that into a presentation without losing their stride."

Aldus and Cricket have made similar claims, citing the built-in charting functions in their programs, and each of the other competitors has its champions.

But there is one point on which Apple, developers and analysts agree: The market will not support all of the current crop of packages.

"Two years from now, will there be six packages that call themselves desktop presentations? Probably not," Cornish said. "I think the competition between the vendors is not really that much of an issue. We're in the growth stage where the important thing is to be in there, have a really strong product and make sure people know about it."

Although Cornish said Apple has no definition of what constitutes a desktop presentation package, a survey of the current products reveals a checklist of features that includes an interactive outliner, text-handling capabilities, drawing tools, charting, a desktop slideshow feature, a spelling checker, templates and color support.

"There's still much more growth in the market," Cornish said. "The real question is going to be who can jump on that wave?" □

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Access to be purchased by CompuServe

BY CLIFF LEHMAN

SOUTH NATICK, Mass. — Access Technology, publisher of MindWrite, MindWrite Express and Trapeze for the Mac, will soon be acquired by CompuServe, a division of H & R Block Inc. of Kansas City, Mo.

Under an agreement signed last month, CompuServe's Software Products division will acquire the Massachusetts developer in a stock deal valued at $36.7 million. While the deal is still awaiting final approval by Access shareholders and government regulatory agencies, it should be sealed in the "very near future," according to Ray Kingman, director of marketing and sales at Access.

Best known for its on-line information and electronic-mail system, CompuServe has acquired several developers of business-management and database software for mainframes.

Access Technology's flagship product is 20/20, a spreadsheet that runs on Digital Equipment Corp.'s VAX line and other platforms. In its last fiscal year, ending April 30, Access' net earnings rose 54 percent to $2.5 million on revenues of $18.3 million.

Access bought into the Macintosh market early this year by acquiring Trapeze and MindWrite and setting up a Mac development center in Monterey, Calif. Making connectivity the crux of its strategy, the company this summer released an enhanced product called MindWrite Express, designed to facilitate sharing of word processing files in multivendor environments, and previewed MacDBC, a program that promises Mac users easy access to databases running on VAX systems.

Kingman said the buy-out will give Access the backing it needs to continue its penetration into the Mac software market. "The stated direction is business as usual," he said. ☐

Apple cancels sales meeting

CUPERTINO, Calif. — Two thousand Apple employees scheduled to attend an annual worldwide sales conference that the company had planned to convene next month in Orlando, Fla., recently received a terse electronic message notifying them that the event had been canceled.

The disclosure provoked speculation among Apple watchers about confusion in the company's newly reorganized leadership. But Barbara Krause, Apple's director of public relations, dismissed such reports, saying that the company had simply opted to hold three regional sales meeting instead.

Apple will wait until next year to gather all its troops, Krause said.

"Next year is a new product year, and people will probably get more out of meeting then," she said. "Next month, they'll talk about strategies from a regional standpoint."

"Any company growing at 40 percent annually is going to look like it's disorganized," said Stewart Alsop, publisher of PC Letter in Redwood City, Calif. Noting that the recent reorganization had placed Allan Z. Loren alone at the top of Apple USA, Alsop suggested that the sales force may be going through a period of assimilation as the company gears up for the coming year's expansion. ☐

Adobe earnings soar

BY CLIFF LEHMAN

MOUNTAIN VIEW, Calif. — Boom. Boom boom. Quarter after quarter Adobe Systems Inc. posts phenomenal profits with royalties on its PostScript interpreters, typefaces and graphics software.

Results from the third quarter of fiscal 1988, ending Aug. 31, continued that trend, as Adobe earned 59 cents per share, far outshining the 45 cents predicted by industry analysts.

Earnings per share increased by 157 percent over the 23 cents earned in the third quarter of 1987.

Adobe, based in Mountain View, Calif., had a net income for the quarter of more than $6.37 million on revenues of more than $25 million. The figure represents a 169 percent gain over the approximately $2.4 million reported in the third quarter of 1987. Revenues were up 139 percent from the $10.5 million recorded in the third quarter of 1987.

For the first nine months of the fiscal year revenues were up 115 percent to $58.2 million and net income rose 130 percent to $14.4 million.

John Warnock, president and CEO of Adobe, attributed the company's success to contributions from all areas of the company's business. "We believe that our business will continue to be good in the fourth quarter, but [we] expect a more modest growth rate," he said. Adobe's board of directors declared a cash dividend for the quarter of 8 cents per share.

Revenues from Apple contributed about 32 percent of the total revenues in the third quarter of 1988 and about 31 percent for the nine-month period that ended Aug. 31. ☐

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From idea to a dealer near you

Development has many stages

BY RENEE MATHEWS

SAN FRANCISCO — Behind the product-shipment stories that fill the pages of publications like MacWEEK lies a complex and sometimes dramatic process of planning, coordinating and packaging — a process that often goes unnoticed by the end user, but one that is fraught with dangers that can jeopardize a company's reputation and a product's prospects.

Delays due to engineering problems and software glitches are well-known, but a problem in any one of several other areas can also affect production schedules and leave vendors vulnerable to charges of promoting "vaporware."

Developers have agreed that sticking to a detailed product development plan is difficult because each product is unique and has its own schedule.

"It's hard to pinpoint the exact inception of a product," said John Kirk, treasurer and principal at CE Software Inc. of West Des Moines, Iowa. "The start of one idea can rapidly change into a completely different product."

FRED MERTZ

Dave Kinser, Claris vice president of operations, said key personnel meet once a week to track a product's progress.

At Claris Corp. of Mountain View, Calif., officials representing the various stages of product evolution, including development, testing, manufacturing, marketing and distributing, meet on a weekly basis. According to Dave Kinser, vice president of operations, the meetings help Claris' teams to keep close track of an individual project's progress and maintain targeted schedules. "It requires a lot of coordination because project forecasts can change quickly," he said.

But just as each product is unique, each company has its own method of bringing a product to market. For example, some companies choose to make announcements only when a product is ready for shipment. "There's nothing worse than building demand and not having product on a reseller's shelves," said Robin Shepherd, spokeswoman for Borland International of Scotts Valley, Calif.

Other manufacturers choose to pre-announce a product to generate interest before the actual shipment occurs. Advance discussion also gives the developer an opportunity to accumulate information about the features that potential customers will request in a particular type of product. "But you have to be careful not to announce a product too early," Kinser said, "because it can backfire, resulting in a loss of momentum in an existing product."

After freezing the product code, developers either send the program to a commercial disk-duplication and packaging house or duplicate copies and assemble packages in-house. "We do everything in-house, including software development, manufacturing, disk duplicating, packaging and shipping," said CE Software's Kirk. "It's just more economical for us."

Claris, on the other hand, relies on the services of outside "turnkey houses" for disk duplication, product assembly and packaging. "The entire process is done out of house," said Kinser. "We're able to farm these components out as a variable cost as opposed to a fixed cost. So we're only paying out for the services when we actually need them," he said.

To "build the box," every component — from the registration card and package sleeve to the manual and disk labels — must be coordinated in advance so the assembly will run smoothly. "By employing the services of turnkeys we're able to tell them what we want and select the vendors and quality of merchandise they will be using," said Kinser. "Turnkeys are responsible for all the components in product assembly, so they relieve us of that portion of the business."

When package assembly is complete and the shrink-wrap is neatly in place, publishers offering enhanced versions of existing products face yet another dilemma: how to balance the demands of loyal customers eager to upgrade along with the need to get the latest and greatest version into retail channels as quickly as possible. Here again, vendors reach different conclusions.

"We begin our shipping phase by mailing upgrades to our installed base of customers," said Kandes Bregman, vice president of communications at Symantec Corp.'s Living Videotext division in Mountain View, Calif. "That's why it's so important for users to register their products," she said.

"We try to send upgrades concurrently with our product shipments," said Kirk. CE Software notifies its customers of new product developments via newsletters and postcards.

But the announcement that a product is shipping is no guarantee that users will find it immediately on their nearest dealer's shelf. "When we say something is shipping, we mean it's being shipped by us on that day," said Kinser. "It can take up to a week before it is moved through the pipeline to dealers."

And no matter how steadfast a company may seem to be about committing to delivery dates, delays do occur. According to Shepherd, typically, there are two causes. In some cases, she said, developers make intentional over-optimistic pre-announcements, in an attempt to put a freeze on the market by revealing an impressive feature list that will deter potential customers from adopting competing products in the meantime.

The second, and more common, type of product delay is less Machiavellian: Developers simply miscalculate the time required to complete and test the product, fix the bugs and complete the manuals and packaging. Delays ranging from weeks to a few months are virtually an industry norm, but in some notable cases the process has dragged on much longer. "With software it's a difficult challenge to be able to predict within the week when a product will be delivered," said Shepherd, "but when you're off target by [a few months], it's usually due to a major change in company strategy or in the technology being used."

To avoid delays companies often build-in time allowances for additional product testing, last-minute enhancements and bug fixes. "I think customers are more aware of the growing complexity of the decisions that companies have to make regarding what operating systems, hardware and graphics standards should be supported," said Shepherd. "To be successful a company must satisfy its customers over the long term, and hopefully that's what most companies are basing their decisions on," she said.

Dealers and distributors also can suffer from product postponements. "When a product is delayed, it really affects us because we are very proactive with new products and the advertising of them," said Larry Foster, senior vice president of merchandising for Egghead Discount Software Inc., a nationwide reseller based in Seattle, Wash.

Foster cited a recent instance where Egghead had invested heavily in an advertising campaign scheduled to hit the street at the same time the product was to begin shipping. "We were in constant contact with the developer's duplication house," said Foster. "We called about our order every hour on the hour to monitor the situation and ensure that we would be receiving the first wave of the shipment," he said.

In that particular case, the product arrived on schedule. ☐

CALENDAR

CONFERENCES

Oct. 2-6	**Electronic Design in Print** (San Diego) The conference presents management and technical information for publishers and creative teams involved with the design process for print. Contact: Patrice Dunn at (619) 758-9460.
Oct. 2-6	**Lasers in Graphics: Electronic Publishing in the '90s** (San Diego) The expanding horizons in electronic pre-press will be the theme of the convention, including satellite transmission of digital color images and optical-disk storage techniques. This conference will run concurrently with the Electronic Design in Print conference. Contact: Patrice Dunn at (619) 758-9460.
Oct. 11-14	**Information Management Exposition and Conference** (New York) The conference is devoted to the business uses of information systems, including networks, peripherals, telecommunications and computer security systems. Contact: INFO 88 at (203) 964-0000.
Oct 15-16	**HyperExpo (Boston)** Designed to serve the needs of the entire hypermedia community, from the developer and corporate end user to the educational community and the most experimental futurists. In the exhibit, attendees will meet the organizations that provide resources that make the application of hypermedia possible. Contact: American Expositions at (212) 226-4141.
Oct. 17-21	**Electronic Printer and Publishing Conference Series** (San Jose, Calif.) This event will examine the driving forces in the printer industry, the strong demand for color in the work place and the use of new technologies in the production, finishing and distribution aspects of electronic publishing. Contact: Martha Johnson at (617) 982-9500.
Oct. 18-20	**Dexpo West 88** (Anaheim, Calif.) Digital Equipment Corp.'s exposition will feature DEC and compatible hardware, software, systems and services from 350 vendors. Contact: Expoconsul International at (800) 628-8185.
Oct. 19-21	**Image scanning and processing** (Amsterdam, Holland) A comprehensive look at the image scanning and processing market. Contact: CAP International at (617) 982-9500.
Oct. 20-22	**Microcomputer Technology in Special Education and Rehabilitation** (Minneapolis, Minn.) Topics will cover a broad spectrum of technology as it is being applied to all disabilities and age groups in education, rehabilitation, vocation and independent living. Contact: Closing The Gap at (612) 248-3294.
Oct. 21-22	**SigMAChem I** (Lubbock, Texas) Apple and The Special Interest Group on the Macintosh in Chemistry are sponsoring this event, which will provide an opportunity to hear about, see and share Mac-related chemical applications. Contact: Dr. Russ Larsen at (806) 742-3057.
Oct. 24-25	**InterTainment '88** (New York) This event provides an opportunity for software companies to explore critical product development, production, marketing, finance and interindustry issues. The focus is on software for interactive entertainment and the common issues that software companies must face and solve. Contact: Conference Coordinator at (212) 382-3929.
Oct. 24-26	**Microcomputers for Building Design** (Madison, Wis.) Emphasizing the use of the Mac II as a platform for architectural design, this workshop will help architects, engineers and building contractors sort through the software available for use in today's building industry. Contact: Engineering Information at (800) 262-6243 or (800) 362-3020 in Wisconsin.

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RUMORS/MAC THE KNIFE

Insiders say that the Apple internal security forces are on alert due to recent exposés of the company's product plans and other assorted leaks. While Apple will never have enough fingers to plug the leaks, the company plans to educate employees about how to prevent breaches of security.

A recent Apple employee newsletter warns the troops about having conversations involving confidential information in public places where they could be overheard by the wrong people. They must mean those long lunches and late dinners at some of Cupertino's finer eateries. Diagrams of unannounced products on restaurant napkins and matchbooks are another no-no. For more details on how to avoid forms of corporate spying and subversion, check out the company's "Guidelines of the Information Protection Program."

Cloak and dagger. Spy movie tactics also are becoming common over DRAM, which remains a precious commodity. Apple agents have been noticed around international bus depots and airports in trench coats, whispering into walkie-talkies as they check out chip samples or possibly cache clandestine deliveries from beady-eyed couriers.

The Knife has even heard that counterfeiters have been placing false covers on chips to disguise 64-Kbyte chips as 256-Kbyte chips. Apple and other vendors have been known to cart their electron microscopes around for closer inspection of suspect goods.

Wyse move. San Jose-based Wyse Technology is planning to make a move to capture some of the Mac monitor market. If you weren't already aware of this development, then you must not be on any headhunter's list because everyone who is has already been contacted.

Just about everyone besides Bill Lowe will tell you that demand for IBM's PS/2 has been a tad weak, so the Knife was surprised to get a call from a trusted informant who stated that his organization has just successfully installed 1-Mbit SIMMs purchased directly from IBM into several in-house Mac IIs. After some checking the Knife was able to verify that even though each PS/2 SIMM contains a ninth chip used for parity checking, they do work in the II, which seems to just ignore the extra chip. The possibilities are pretty interesting, considering that IBM manufactures some of its own 1-Mbit chips and sells them to favored customers such as universities for less than $280. Hmmm.

Die, yuppie scum. "It's just no fun anymore" seems to be the lament inside Apple's sales organization, but then the Valley Beamer crowd has always been prone to complaining when things change. And change things have, under the Allan Loren regime. His gruff Bronx heritage makes quite a contrast to the happy corporate yuppie culture that prevailed in simpler times.

Can a St. Bernard be called a lapdog? The final design problems with the laptop are closer to being resolved, although reports are that the battery is very heavy and will require a muscular set of legs for true laptop use. Perhaps the unit will be bundled with a free health club membership without adversely cutting into Apple's sacrosanct margins.

Rumors persist that the flamboyant head of a California software firm will soon be relieved of all but ceremonial functions of the company that he created, while real power within the organization will be held by individuals better skilled at company management. The new responsibilities will be purely ceremonial, not unlike those that were recently passed from the emperor to the prince in Japan.

Such a deal. Apple's price increase may have been no surprise to at least one large customer. The Knife has received reports that one reseller got an inside tip about the impending move a week before the event. This would seemingly give the large reseller a significant short-term advantage over the competition.

One unexpected result of the price increase has been an upsurge in sales. One all-Apple salesman reports that his sales for September are up more than 100 percent, primarily from corporate customers, many of which have ordered more Mac equipment since the price increase than they have in the past 12 months. That prices may never be this low again seems to be the reasoning. According to this successful salesman, the price increase is "the best thing Apple's ever done."

One trouble with reporting the future is that the future doesn't always cooperate. Radius is a case in point. The company did not alter the price of the Full Page Display as predicted. Or take the Stanford University class in NeXT programming. It was canceled weeks ago, although there is a chance that it will be revived, at least according to a representative at the Stanford computer science department.

And in this corner. There are contrary indications to last week's report on the fortunes of Cricket Software. The Xerox-marketed Windows version of Cricket Presents... will be shown in one form or another at Las Vegas Comdex, with real plans to ship shortly thereafter. The Cricket Expressions drivers are being evaluated with an open mind by a couple of major Japanese printer manufacturers, too. According to the Knife's source on this item, at least one of these manufacturers is a considering dropping its current PostScript license with Adobe entirely.

* * *

You can trade your hot tips for a MacWEEK mug in complete confidentiality and safety since Mac the Knife never talks to House Speaker Jim Wright and rarely boxes in the Olympics. You can contact the Knife at (415) 882-7370 or MCI (MactheKnife). ☐

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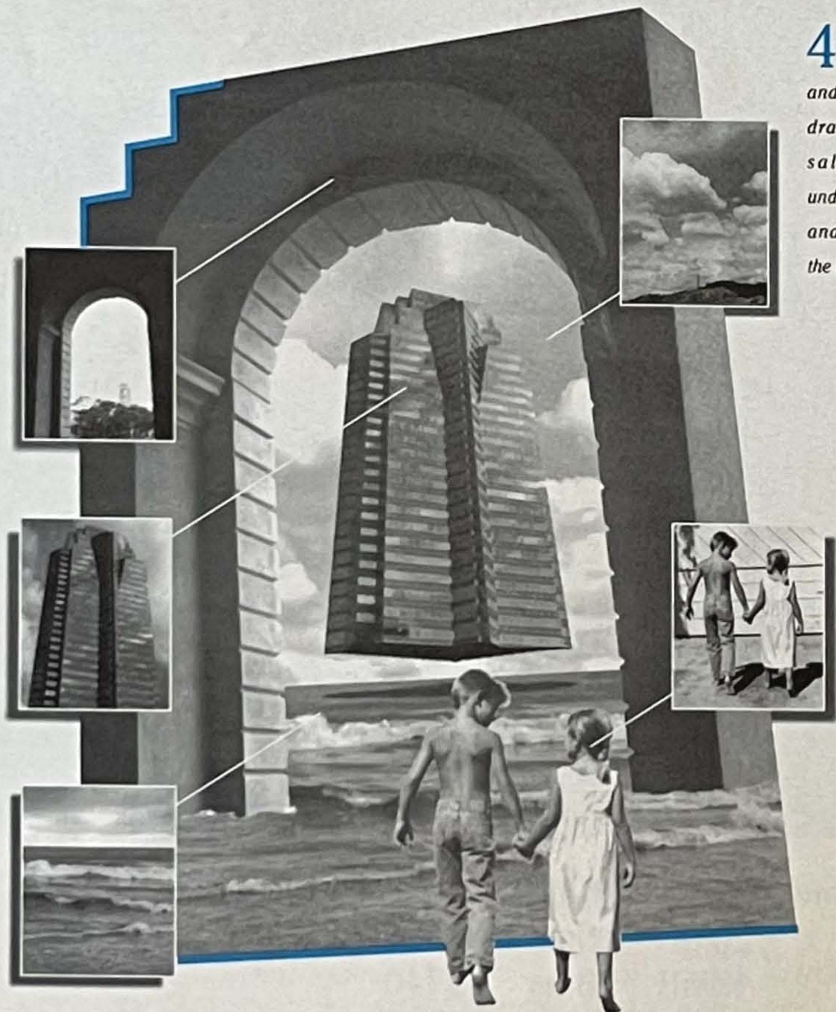

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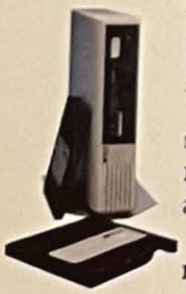

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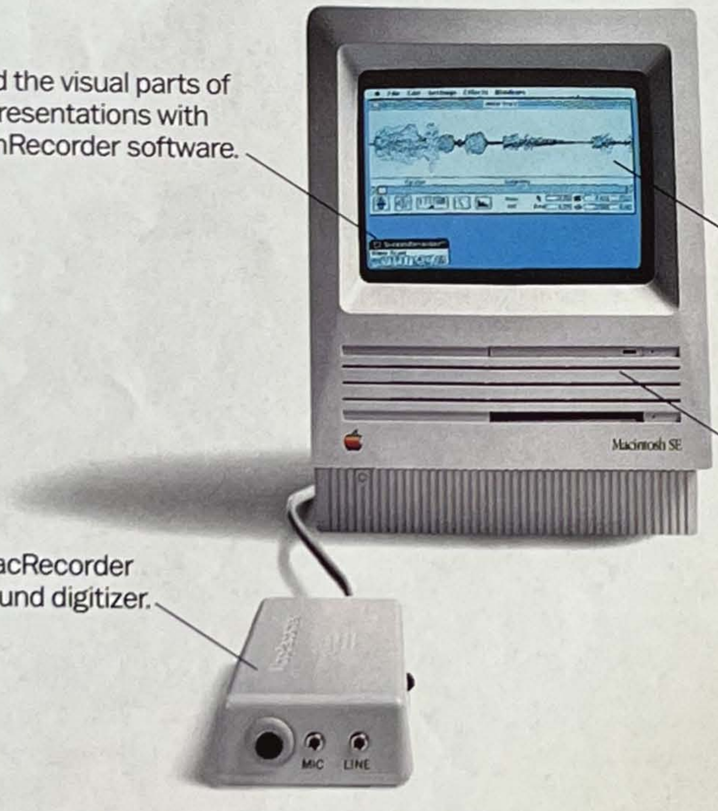

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